

NOTES ON THE GENUS CLERODENDRUM (VERBENACEAE). XXX

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CLERODENDRUM Burm.

Additional & emended bibliography: Ait., Hort. Kew., ed. 1, 2: 364. 1789; Jacq., Collect. Bot. Suppl. 117--119, pl. 4, fig. 1, & pl. 5, fig. 1. 1796; D. Dietr., Syn. Pl. 613--616. 1842; A. Rich. in Sagra, Hist. Fis. Polit. Nat. Cuba 11 [2] [Fl. Cub. Fanerog. 2]: 146--147. 1850; Regel, Gartenfl. 11: 64/65, pl. 353. 1862; Regel, Trans. Russ. Hort. Soc. 1862: pl. 79. 1862; Hemsl., Biol. Cent.-Amer. 2: 540. 1882; Friedrich, Abh. Geol. Specialkarte Preuss. 4 (3): 339 [181], pl. 23, fig. 4, & pl. 28, fig. 14. 1883; J. Ramirez, Veg. Méx. 110. 1899; T. S. Brandeg., Univ. Calif. Publ. Bot. 6: 191. 1915; Br., Merr., & Yates, Philip. Journ. Sci. Bot. 12: 222 & 240. 1917; J. G. Baker in Rendle, Journ. Bot. Brit. 63: Suppl. 81. 1925; P. C. Standl., Field Mus. Publ. Bot. 3: 400. 1930; Roys, Tulane Univ. Mid. Amer. Res. Ser. Publ. 2: [Ethno-Bot. Maya] 248 & 319. 1931; Lundell, Carnegie Inst. Wash. Publ. 478: 25, 26, 75, 138, 183, & 203. 1937; Mold., Revist. Sudam. Bot. 8: 170. 1950; Roig, Dicc. Bot. Nom. Vulg. Cub. 2: 287, 496, 607, 715--716, 878, & 1005. 1953; Anon., Assoc. Étud. Tax. Fl. Afr. Trop. Ind. 1954: 66. 1955; Anon., Trav. Lab. Bot. Syst. Brux. 16: 66. 1955; Hocking, Excerpt. Bot. A.11: 103 & 504. 1967; Thom, Journ. Ecol. 55: 315 & 320. 1967; Gibson, Fieldiana Bot. 24 (9): 179 & 192--195, fig. 36. 1970; A. R. Sm., Hook. Icon. Bot. Pl. 37 [ser. 5, 7]: pl. 3691. 1971; Anon., Assoc. Etud. Tax. Fl. Afr. Trop. Ind. 1971: 57. 1972; Rouleua, Taxon Ind. 1: 92. 1972; Buck, Bull. Torrey Bot. Club 113: 81. 1986; Mold., Phytologia 61: 378--420. 1986.

CLERODENDRUM LAEVIFOLIUM Blume

Additional & emended bibliography: Bakh. in Lam & Bakh., Bull. Jard. Bot. Buitenz., ser. 3, 3: 74, 80--81, 85, 108, 109, VIII, & IX. 1921; Mold., Phytologia 61: 411 & 419--420. 1986.

Continuing the emended description by Decaisne (1834): "calycibus fructiferis profunde 5-fidis, segmentis subdeltoideo-lanceolatis acutis glaberrimis introrsum rubro-purpureis; drupis laevibus nigris calyce brevioribus....Obs. Les échantillons incomplets que j'ai sous les yeux, me dispensent de faire presque uniquement pour les feuilles, une description plus étendue. Je rapporte également avec doute cette plante au *Clerodendrum laevifolium* cité par M. Blume, parce qu'elle paroît avoir aussi de l'analogie avec le *Clerodendrum macrophyllum* du même auteur." The specimens he refers to here were apparently from Timor, from which area *C. laevifolium* is also known.

Dietrich (1843) repeats Blume's original description in slightly abbreviated form. Steudel (1840) lists the species from both Java and Timor. Spanoghe (1841) cites it from Timor as "Herb. Timor. p. 71" and gives *C. macrophyllum* Blume as a possible synonym (but I regard the latter as representing *C. phyllomega* Steud.).

Merrill (1929) cites Elmer 20287 & 20625 from near Sandakan and

Tawao, Borneo, describing the plant as "An undershrub in dry forests and thickets near tidewater, the calyx red, corolla yellowish green to yellow. Malay Peninsula, Penang, Sumatra, and Java; not previously recorded from Borneo. The first number cited was originally determined by me as *Clerodendron disparifolium* Blume, a manifest error, and the duplicates were so distributed."

Corner (1952) lists *C. laevifolium* from Western Malaysia, noting that it is "common throughout Malaya in villages, open country, and lowland and mountain woods to 4,000 ft. The shoots wilt quickly when plucked." He distinguishes the species from others which he regards as common wayside trees in the tropics as follows:

1. Leaf-blades velvety, heart-shaped; flowers and fruiting-calyx white.....*C. villosum*.
- 1a. Leaf-blades, flower, and fruiting-calyx not as above.
2. Flowers and fruits in dense heads turned to the underside of the twigs or stem.....*C. deflexum*.
- 2a. Flowers and fruits not as above.
3. Leaf-blades marginally entire; corollas yellow, with a long tube; fruiting-calyx star-like.....*C. laevifolium*.
- 3a. Leaf-blades marginally dentate; corollas greenish-white and lilac; fruiting-calyx not star-like.....*C. serratum*

Meeuse (1942) comments that "Bakhuisen van den Brink misinterpreted Blume's species *Cl. laevifolium* and *Cl. disparifolium*. A study of Blume's specimens in Herb. L.-B. showed, that *Cl. laevifolium* is a synonym of *Cl. nutans* Wall., a plant which occurs in Java only in a cultivated state, though Blume apparently erroneously states, that it occurs in primary forests on Mt. Salak and Mt. Gedeh. A study of the type of *Cl. disparifolium* Bl. reveals, that this is Bakhuisen van den Brink's '*Cl. laevifolium*'. The name *Cl. disparifolium* was used by Bakhuisen van den Brink for a third species, viz. *Cl. eriosiphon* Schau. (which is mentioned by him as a synonym)." I am not prepared to follow Meeuse in this radically different interpretation. Merrill notes that "this [species, i.e., *C. laevifolium*] never has a nodding inflorescence" as does Wallich's *C. nutans*, [now known as *C. wallichii* Merr.].

Hochreutiner remarks that "Koorders et Vleton indiquent cette plante seulement à des altitudes basses et ils la considèrent comme un arbuste, mais c'est un véritable arbre de 8--10 m. à l'endroit où nous l'avons récolté."

Collectors have found *C. laevifolium* growing on hillsides and hilltops, in primary, evergreen, and montane forests, in clearings and recently logged virgin forests, along streamsides and roadsides, on sandy beaches, at the margins of evergreen forests, in second-growth in wet places, in jungles near tidewater, on flatlands, steep slopes, and granitic hills, and in the dry soil of woods, at 18 to 1330 m. altitude, in flower from March to January, in fruit from October to February and in June and July.

The corollas are described as having been "yellow" on Elmer 20287, Kalantas SAN. 90612, Mahmud 4810, and Yates 1669 & 1930, "yellowish" on Hochreutiner 1724, Krispinus SAN. 95818, and Madani SAN. 31716, "pale-yellow" on Kochummen FRI. 23143 and Stone 10769, "yellowish"

"lowish-green" on Elmer 20625, Fidilis & Sumber SAN.96061, and Krispinus SAN.95874, "greenish-yellow" on Abbe & Abbe 10163, "light-green" pn Geesink & al. 7334, "whitish" on Fidilis & Sumber SAN.88993, "yellowish-red" on Krispinus SAN.95906 and Madani SAN.91691, "reddish" on Krispinus SAN.95402 and Larsen & Larsen 32908, and "tube very pale yellow-green, petals yellow-green" on Jacobs 9642.

Geesink and his associates refer to the species as a common shrub in sunny places in Thailand.

Common and vernacular names reported for the species are "chekop manis gajah", "kajoe haraboe", "kajoe haboe-haboe", "kajoe si marhaboe-haboe", "kajoe si marhaboe haboe", "kibangbara", "ki sai", "lampin budak", "leukong", "patah ajam", "sepang", "sipang", and "swaddling flower".

In regard to the homonymous synonyms referred to in the synonymy (above) *Clerodendrum disparifolium* Blume is regarded by me as a valid species (which see), with *Clerodendron disparifolium* Blume and *Clerodendron disparifolium* Kochum. as synonyms of it, while *C. disparifolium* Bakh. is a synonym of *C. garrettianum* Craib; *C. javanicum* Spreng. belongs in the synonymy of *C. inerme* (L.) Gaertn. and *C. javanicum* Walp. is a synonym of *C. serratum* (L.) Moon; *C. laevifolium* Bakh. is *C. disparifolium* Blume, *C. laevifolium* Decaisne is *C. longiflorum* Decaisne, and *C. laevifolium* H. J. Lam is *C. wallichii* Merr.

It should be mentioned that Bartlett 8195, Boeea 1842, and Toroes 1433, 2059, & 2637 are all accompanied by wood samples in the University of Michigan museum. Yates 1930 is accompanied by a photograph of the plant in situ.

The unnumbered Martens collection, cited below, was taken from material cultivated in Belgium from seeds sent by Reinwardt from Java,

A key to help distinguish *C. laevifolium* from other Indonesian taxa will be found under *C. klemmei* Elm. in the present series of notes [61: 410-415].

Material of *C. laevifolium* has been misidentified and distributed in many herbaria as *C. acuminatum* Wall., *C. disparifolium* Blume, *C. disparifolium* p *denticulatum* Hort., *C. eriosiphon* Schau., and even Solanaceae. On the other hand, the Gibot SAN.29570, distributed as *C. laevifolium*, actually is *C. barba-felis* H. Hallier.

Citations: THAILAND: Geesink, Hattink, & Charoenphol 7334 (Ac); Larsen & Larsen 32908 (Ac, Ld); Maxwell 72-15 (Ac); Winit 5871 (N). VIETNAM: Tonkin: Pételet 825 (Ca--223718), 1260 (Ca--234269). MALAYA: Kelantan: Haniff & Nur 10094 (Bz--19885, Ca--346266). Malacca: Hervey s.n. [1886] (Pd); Kiah 37226 (Bz--19172). Negri Sembilan: Khoo & Ming N.K.002 (Kl--8839). Pahang: Best 14135 (Ca--237349); Mahmud 4810 (Ld, Ne--33493); Nur 11303 (Bz--19883), 32748 (Ca--3258, W--2157498); B. C. Stone 10769 (Kl--15915). Penang: Haniff 7 (Ca--355249). Perak: Scortechini 297a (Ca--528992). Selangor: Kochummen FRI.23143 (Ac); Poore 392 (Kl--392). Singapore: Abbe & Abbe 10163 (N); N. J. Andersson s.n. [28 Jan. 1853] (S, S); C. B. Clarke s.n. (Pd); Clemens & Clemens 22566 (N, N); Goodenough s.n. [Changi, 1889] (Ca--267604); Kuntze 6093 (N, N); Liew 36495 [tree

404] (Bz--19884); Maxwell 76-810 (Ac); Nur 35599 (S); Ridley s.n. [1896] (Bz--19886); Wilkes s.n. [Singapore] (W--74537). Trengganu: Corner 33479 (Bz--19880). Wellesley: Ridley s.n. (Bz--19887, Bz--19888). State undetermined: Griffith 6046/1 (Mu--772, Pd, S, Ut--11528). GREATER SUNDA ISLANDS: Anambas: Van Steenis 1260 (Ut--97084). Boegoeran: Van Steenis 1092 (Bz--19876, Bz--19877, Ut--97082), 1260 (Bz--19878, Bz--19879). Java: Arsin 19525 (Bz--19778); Backer 1254 (Bz--19802, Bz--19803), 1345 (Bz--19814, Bz--19815), 1774 (Bz--19809, Bz--19819), 4126 (Bz--19810, Bz--19811), 5829 (Bz--19774), 7083 (Bz--19773), 9900 (Bz--19771, Bz--19772), 10085 (Bz--19769, Bz--19770), 10296 (Bz--19812, Bz--19813), 19812 (Bz--19793, Bz--19794), 21076 (Bz--19793, Bz--19794), 21113 (Bz--19790, Bz--19791, Bz--19792), 22076 (Bz--19788), 23195 (Bz--19783), 25945 (Bz--19829, Bz--19830); Bakhuizen 280 (Bz--19785), 286 (Bz--19775), 509 (Bz--19817, Bz--19818, Ut--24890A, Ut--58423), 633 (Bz--19776), 7151 (Bz--19805), 1731 (Bz--19786), 1732 (Bz--19787, Bz--25520), 2109 (Bz--19784), 3081 (Bz--19762, Bz--19763, Bz--25521, Ca--265971), 3117 (Bz--19758, Bz--19759, Ut--63807), 3135 (Bz--19760), 3182 (Bz--19795, Bz--19796), 3186 (Bz--19761), 3802 (Bz--19789), 4084 (Bz--19804), 5450 (Bz--19826, Bz--19827, Bz--19828, L, Ut--66907), 5825 (Bz--19781, Bz--19782), 6137 (Bz--19767, Bz--19768), 6235 (Bz--19756, Bz--19757), 6442 (Bz--19766, Ca--301396, Ut--81348), 7261 (Bz--19785); Forbes 443 (Bz--19820, Bz--19821), 529 (Bz--19822, Bz--19823); Hallier s.n. [Depok, 1.IX.1896] (Bz--19797, Bz--19798), s.n. [14.VIII.1896] (Bz--19779, Bz--19780), s.n. [28.VIII.1896] (Bz--19799, Bz--19800); Hochreutiner 1724 (Ca--41444); Kollman 139 (Mu--826), s.n. (Br); Koorders 24451b [952*] (Bz--19841, Bz--19842, Bz--25498, Pd, Ut--80822), 31280b [1785*] (Bz--19839, Bz--19840), 34345b [1698*] (Bz--19837), 40668b [56*] (Bz--19831, Bz--19832), 40746b [150*] (Bz--19833), 41250b [133*] (Bz--19835, Bz--19836), 41377b (Bz--19834), 44037b [30*] (Bz--19838); Lam 3821 (Bz--19753, Bz--19754, Bz--19755); Lanjouw 145 (Bz--72903); Noerkas s.n. [1912] (Bz--19824, Bz--19825); Soegandiredja 185 (Bz--19807, Bz--19808), 288 (Bz--19801, Bz--19806); Van Steenis 5946 (Bz--19764), 12616 (Bz--19816), 12677 (Bz--19751, Bz--19752, N); Voogd s.n. [25/3/1941] (Bz--72802). Kalimantan: Dachlan 69 [Boschwezen 2372] (Bz--19747, Ca--227877); Rutten 219 (Ut--22694), 264 (Ut--22708, Ut--22709); Slooten 2111 (Bz--19742), 2190 (Bz--19743); Wilkes, United States Expl. Exped. s.n. [Borneo] (C, T); Winkler 2280 (Bz--19745), 3310 (Bz--19741). Paliat: Backer 29566 (Bz--19843, Bz--19844). Sabah: Elmer 20287 (Bi, Bz--19746, Ca--229017, K, Mi, N, Um--146), 20625 (Bi, Br, Bz--19744, Ca--312128, Du--163740, Mu, N, S, Ut--84964, W--2605810); Endert 1554 (Bz--72720), 1558 (Bz--72718), 2152 (Bz--72722), 2670 (Bz--72724), 3389 (Bz--72726), 5207 (Bz--72729); Fedil-is & Sumbing SAN.88414 (Sn--56528), SAN.88993 (Ld), SAN.96061 (Ld); Gibot SAN.37102 (Sn--40677); Kalantas SAN.90612 (Ld); Krispinus SAN.95402 (Ld), SAN.95818 (Ld), SAN.96874 (Ld), SAN.95906 (Ld); Madani SAN.81716 (Sn--46685), SAN.91691 (Ld); Polah & Main 2065 (Bz--72999); Sales 3911 [field no. 463] (Ca--347167); Tanglon A.1566 (K1). Sarawak: Foxworthy 78 (W--713231). Sumatra: Bangham & Bangham 610 (N); Bartlett 8195 (Mi, N, W--1552644, W--1552645); Boeea 1842 (Mi),

5974 (Mi, N), 6036 (Mi, N), 7842 (Ca--14709, S, W--1682368), 7944 (Ca--14585, Mi, S, W--1682300), 8480 (Mi, N, W--2275297); Blnnemeijer 3005 (Bz--19854, Bz--19855), 3557 (Bz--19864, Ut--58424), 3622 (Bz--19867, Bz--19868), 3750 (Bz--19856, Bz--19857, Bz--19858, N), 3833 (Bz--19865, Bz--19866), 4204 (Bz--19848, Bz--19849); Jacobs 4642 (E--1955621); Jacobson 2449 (Bz--19850); Junguhn s.n. (Ut--43909); Krukoff 4198 (Mi, N); LBrzing 4205 (Bz--19874), 4394 (Bz--19872, Bz--19873), 4600 (Bz--19870), 6879 (Bz--19863); LBrzing & Jochems 7478 (Bz--19853); Meer Mohr 13 (Bz--19847, Bz--19851, Bz--19852); Roderkerk 12 (Bz--19869); Saimondt s.n. [Posthumus 866] (B, Bz--19846, Ut--97083); Toroes 942 (Ca--42223, Mi, S), 1433 (Ca--91960, Mi, N, S), 2059 (Ca--531318, Du--234558, Ew, I, Mi, Mi, N, W--1680022), 2277 (Ca--531494, I, Mi, N, W--1703754), 2412 (Mi, N, W--1861042), 2637 (Ca--531441, Du--339602, Mi, N, S, W--1861132), 2720 (Ca--530167, Du--234589, Mi, Mi, N, W--1680383, W--1861171), 3251 (Mi, N), 3857 (Mi, N, W--1681314), 3974 (Ca--530860, Mi, N, S, W--1680603), 4374 (Ca--531412, Mi, N, W--1676357), 4772 (Ca--530595, Mi, Mi, N, W--1681018, W--1681019), s.n. [22-30 June 1933] (W--1681176); Ultee 131 (Bz--19871); Wilde & Wilde-Duyffjes 14891 (W--2996638); Yates 1192 (Bz--19859, Bz--19860, Ca--251167, Mi, N), 1669 (Bz--19861, Ca--264061, Mi, N), 1930 (Ca--287116, Mi), 2479 (Bz--19862, Ca--318537, N, S). Toedjoej: Blnnemeijer 6072 (Bz--19875). LESSER SUNDA ISLANDS: Banka: Posthumus 722 (Bz--19845). Timor: Herb. Mus. Paris s.n. (L). CULTIVATED: Belgium: Martens s.n. (Br). Java: Collector undetermined 296 (Bz--19749), 297 (Bz--19748, Bz--19750); Herb. Hort. Bot. Bogor. XV.J.A.XXXIII.2 (Bz--26387), XV.J.A.XXXIII.2a (Bz--26388, Bz); Herb. Hort. Bog. Jav. s.n. (Pd, Pd, Pd). Singapore: Furtado s.n. [16 Nov. 1928] (Bz--19881, Bz--19882). LOCALITY OF COLLECTION UNDETERMINED: Collector undetermined 93 (S), 103 (Pd), s.n. (Bz--19777).

CLERODENDRUM LAEVIFOLIUM var. FLETCHERI Mold., Phytologia 4: 289. 1953.

Bibliography: Fletcher, Kew Bull. Misc. Inf. 1938: 404. 1938; Mold., Biol. Abstr. 27: 3121. 1953; Mold., Phytologia 4: 289. 1953; Mold., Résumé 177, 216, & 450. 1959; Mold., Fifth Summ. 1: 295 & 359 (1971) and 2: 868. 1971; Mold., Phytol. Mem. 2: 284, 349, & 539. 1980; P. Holmgren & al., Ind. Vasc. Pl. Type Microf. 441. 1985; Mold., Phytologia 59: 331. 1986.

This variety differs from the typical form of the species in having the leaf-blades marginally sinuate-dentate and the calyces deeply 5-fid and 4--11 mm. long during anthesis.

The variety is based on H. B. G. Garrett 899 from waste ground, Forestry Department, Chiangmai, Thailand, collected on November 26, 1934, and deposited in the herbarium of the Royal Forestry Department at Bangkok.

Winit describes the plant as a shrub, 1 m. or "a few feet" tall, generally simple-stemmed, often with many root-suckers, probably exotic, the flowers white (on no. 643) or cream (on no. 1690), tinted reddish outside, and has encountered it at 120 m. altitude.

Khid Suvarnasuddhi, in a letter to me dated July 14, 1953, says

that this plant is commonly found in waste ground, but not in the forests of Thailand. It is not definitely known to be exotic, but its Thai vernacular name of "ka-sa-long Thet" means "the foreign *Millingtonia*" in allusion to its flowers which resemble those of *Millingtonia hortensis*.

The Garrett and Winit collections, cited below, were cited by Fletcher (1938) as *C. disparifolium* Blume, and, indeed, this plant has the general appearance of a smooth variety of that species. It has been collected in anthesis in November and December.

Citations: THAILAND: Garrett 899 (Bk--type, Ld--photo of type, N--fragment of type, N--photo of type); Maxwell 71-90 (Ac); Rock 589 (W--1090399); Winit 643 (Bk), 1690 (Bk).

CLERODENDRUM LAEVIFOLIUM var. *PUBIFLORUM* Bakh. ex Mold., Résumé 187, 190, 192, & 451, nom. nud. 1959; var. nov.

Synonymy: *Clerodendron laevifolium* var. *pubiflorum* Bakh., in herb.

Bibliography: Mold., Résumé 187, 190, 192, & 451. 1959; Mold., Fifth Summ. 1: 322 (1971) and 2: 868. 1971; Mold., Phytol. Mem. 2: 313 & 539. 1980.

This variety appears to be based on F. W. Richards 1838 from Mount Fulit, Ulu Koyan Division, Sarawak, collected on September 15, 1932, and deposited in the Buitenzorg herbarium.

As yet I have not been able to ascertain where Bakhuizen formally published this taxon, but on the type sheet the following inscription occurs: "folia primum supra sparse puberula, mox costa excepta utrinque glaberrima, inflorescentia terminalis villosa, calyx et corolla extus sparse puberuli, corolla albida; forma transit inter *C. laevifolium* Bl. et *C. disparifolium* Bl. ponenda videtur."

Collectors describe the plant as a slender tree, about 6 m. tall, the corolla white, puberulous on the outer surface. They have found it growing in white sand of "heath" forests, at 60--800 m. altitude, in flower in September.

The unnumbered Blume collection, cited below, was originally identified as *Clerodendron disparifolium* in an old handwriting (probably not Blume's because the generic name is spelled "*Clerodendron*", whereas Blume always wrote it as "*Clerodendrum*" in all his publications). I do not regard it as representing Blume's type, since we have another Blume specimen which does fit the modern concept of typical *C. disparifolium* Blume and which I therefore regard as representing the type collection thereof.

Citations: GREATER SUNDA ISLANDS: Java: Blume s.n. (T). Sarawak: Richards 1838 (Bz--19889--type, Ld--photo of type, N--photo of type). Singkep: Blinnemeyer 7376 (Bz--19890).

CLERODENDRUM LANCEOLATUM F. Muell., Fragm. Phyt. Austral. 3: 145 [as "*Clerodendron"]. 1863; Mold., Known Geogr. Distrib. Verbenac., ed. 1, 49--51 & 90. 1942 [not *C. lanceolatum* N. E. Br., 1959, nor Gürke, 1893].*

Synonymy: *Clerodendron lanceolatum* F. Muell., Fragm. Phyt. Austral. 3: 145. 1863.

Bibliography: F. Muell., Fragm. Phyt. Austral. 3: 145. 1863;

Benth. & F. Muell., Fl. Austral. 5: 61, 63, & 67. 1870; F. Muell., Sec. Syst. Cens. Austral. Pl. 1: 173. 1889; Jacks. in Hook. f. & Jacks., Ind. Kew., imp. 1, 1: 561. 1893; S. Moore, Journ. Linn. Soc. Lond. Bot. 34: 236. 1899; F. M. Bailey, Queensl. Fl. 4: 1181 & 1183. 1901; F. M. Bailey, Compreh. Cat. Queensl. Pl. 386 & 389, fig. 364. 1913; Stapf, Ind. Lond. 2: 239. 1930; C. A. Gardn., Enum. Pl. Austral. Occid. 3: 112. 1931; Mold., Known Geogr. Distrib. Verbenac., ed. 1, 49-51 & 90. 1942; Jacks. in Hook. f. & Jacks., Ind. Kew., imp. 2, 1: 561. 1946; Mold., Known Geogr. Distrib. Verbenac., ed. 2, 116, 118, 120, & 182. 1949; Mold., Résumé 427 & 451. 1959; Jacks. in Hook. f. & Jacks., Ind. Kew., imp. 3, 1: 561. 1960; Mold., Résumé Suppl. 3: 26. 1962; Beard, Descrip. Cat. W. Austral. Pl., ed. 1, 91. 1965; Mold., Résumé Suppl. 15: 14. 1967; Beard, Descrip. Cat. W. Austral. Pl., ed. 2, 113. 1970; Mold., Fifth Summ. 1: 345 (1971) and 2: 868. 1971; T. B. Muir, Muelleria 2: 166. 1972; Mold., Phytol. Mem. 2: 335 & 539. 1980

Illustrations: F. M. Bailey, Compreh. Cat. Queensl. Pl. 389, fig. 364. 1913.

Mueller's original (1863) description is: "Velutinum, foliis ovato- v. oblongo-lanceolatis oppositis petiolo duplo triplove longioribus integerrimis, paniculis corymbosis axillaribus et terminalibus, floribus breviuscule pedicellatis, bracteolis oblongis v. linearibus, calycis 5-fidi lobis fere semiovatis, corollae extus breviter pubescentis tubo paelongo. In collibus rupestribus ad sinum Nickol Bay. Pemb. Walcott. Arbuscula saepius 14'. Folia pleraque 2--3", 3/4--1½" lata, nunc sensim acutata, nunc obtusiuscula. Bracteolae circiter 1½" longae. Calyces floriferi circiter 2½" longi, fructiferi conspicue aucti et incrassati, fere semipollucem metientes, lobis denique reflexis et delfoideis. Corollae tubus circiter pollicaris, lobii 2--3" longi. Filamenta conspicue exserta. Antherae 2/3" longae. Fructus vix maturi 3--4" metientes."

Beard (1970) describes the plant as an "Elegant shrub 6--9 ft." tall, with black "berries" [actually drupes]. Moore (1899) avers that it is found in the desert north of 30° among the endemics which have advanced from Western Australia into the northern part of the Western Australian desert. Bentham & Mueller (1870) admit that the species is almost indistinguishable from *C. tomentosum* and consists of both narrow- and broad-leaved forms.

The *C. lanceolatum* N. E. Br. and *C. lanceolatum* Gürke, mentioned above, are synonyms of *C. ternatum* var. *lanceolatum* (Gürke) Mold., in southern Africa.

Nothing is known to me of *C. lanceolatum* F. Muell. beyond what is stated in its bibliography (above) and I anxiously await Dr. Munir's disposition of it.

CLERODENDRUM LANCEOLIFERUM S. Moore ex J. G. Baker in Rendle, Journ. Bot. Brit. 63: Suppl. 81 [as "Clerodendron"] 1925; Mold., Known Geogr. Distrib. Verbenac., ed. 1, 63 & 90. 1942.

Synonymy: *Clerodendron lanceoliferum* S. Moore ex J. G. Baker in Rendle, Journ. Bot. Brit. 63: Suppl. 81. 1925.

Bibliography: J. G. Baker in Rendle, Journ. Bot. Brit. 63: Suppl.

81. 1925; Greene, Kew Bull. Misc. Inf. 1930: 43. 1930; Fedde & Schust., Justs Bot. Jahresber. 53 (1): 1072. 1932; A. W. Hill, Ind. Kew. Suppl. 8: 54. 1933; Mold., Known Geogr. Distrib. Verbenac., ed. 1, 63 & 90. 1942; Mold., Alph. List Cit. 1: 207. 1946; Mold., Known Geogr. Distrib. Verbenac., ed. 2, 143 & 182. 1949; Mold., Résumé 188 & 451. 1959; Mold., Fifth Summ. 1: 322 (1971) and 2, 868 & 971. 1971; Mold., Phytol. Mem. 2: 313, 387, & 539. 1980.

Moore's original (1925) description of this plant is: "Arbor grandis; ramis subteretibus bene foliosis minute pubescentibus postea glabrescentibus; foliis oppositis vel ternis ejusdem paris saepe inaequalibus majoribus 17--20 x 3.5--4 cm. minoribus summum circa 8 x 2.5 cm. oblongo-lanceolatis acuminatis margine integris leviter-ve undulatis basi trinervibus membranaceis supra scabriusculis sub-
tus in costis puberulis petiolis 5.5--7 cm. long. foll. minorum circa 2 cm.; cymis axillaribus foliis paullo brevioribus patentibus laxifloris bracteis paucis foliaceis inferioribus saepe 6 x 1 cm. onustis superioribus gradatim imminutis; pedunculis minute pubes-
centibus 5.5--8 cm. long.; pedicellis tenuibus calyci subaequilon-
gis uti calyx glanduloso-pubescentibus; calyce 14--15 mm. long.
segmentis linearibus acuminatis 11 mm. long.; corollae axtus glandu-
loso-pubescentis tubo recto 23 x 1 (ipso sublimbo fere 2) mm. lobis
subaequilonis anticis concavis 7 mm. long.; antheris ovatis 2 mm.
long."

The species is based on *Forbes 2813* from virgin forest at Tand-jong-Ning, R. Bliti, Palembang, Sumatra, at an altitude of 600 feet. The corollas are said to have been white and a reported vernacular name for the plant is "katoempoeng".

In the herbarium of the Botanisches Institut der Universität in Vienna, I have seen a specimen purporting to be of *Forbes 2813*, the type collection of this species, but it proves to be not even verbenaceous! I suspect that it represents a case of mixed labels during mounting, since the specimen itself does not agree at all in its characters with Moore's published description (above).

Nothing else is known to me of this taxon.

CLERODENDRUM LANESSANII Dop in Lecomte, Notul. Syst. 4: 9 [as "*Clerodendron*"]. 1920; Mold., Known Geogr. Distrib. Verbenac., ed. 1, 59 & 90. 1942.

Synonymy: *Clerodendron lanessanii* Dop in Lecomte, Notul. Syst. 4: 9. 1920.

Bibliography: Dop in Lecomte, Notul. Syst. 4: 9. 1920; A. W. Hill, Ind. Kew. Suppl. 6, imp. 1, 49. 1926; Fedde & Schust., Justs Bot. Jahresber. 48 (1): 497. 1927; Dop in Lecomte, Fl. Gén. Indo-chine 4: 852 & 877. 1935; Mold., Known Geogr. Distrib. Verbenac., ed. 1, 59 & 90. 1942; H. N. & A. L. Mold., Pl. Life 2: 68. 1948; Mold., Known Geogr. Distrib. Verbenac., ed. 2, 136 & 182. 1949; A. W. Hill, Ind. Kew. Suppl. 6, imp. 2, 49. 1959; Mold., Résumé 175 & 451. 1959; Mold., Fifth Summ. 1: 300 (1971) and 2: 868. 1971; Mold., Phytologia 31: 395. 1975; Mold., Phytol. Mem. 2: 291, 387, & 539. 1980; Mold., Phytologia 60: 142. 1986.

A shrub; branches glabrous, lenticellate; leaves decussate-oppo-

site; petioles slender, about 4 cm. long; leaf-blades membranous, obovate or obovate-oblong, about 13 cm. long and 4.5 cm. wide, apically rounded and short-acuminate, marginally subentire or irregularly sinuate-dentate, basally acute, glabrous; midrib rounded, very prominent; secondaries slender, 12--14, arcuate; tertiaries subparallel; veinlet reticulation somewhat distinct; inflorescence terminal, paniculate, 8--10 cm. long, 5--6 cm. wide, glabrous, the ramifications slender, re-branched; bracts small, linear; bractlets obsolete; pedicels short; calyx campanulate, 6--7 mm. long, glabrous, deeply divided, the tube almost obsolete, the lobes linear-oblong, 6 mm. long, 1 mm. wide, apically acute; corolla hypocrateriform, glabrous, the tube cylindric, 10 mm. long, the lobes spatulate, 5--6 mm. long, apically obtuse; stamens long-exserted; filaments glabrous; anthers oblong; style slender; stigma shortly bifid; ovary glabrous; fruit not known.

This species is based on an unnumbered de Lanessan collection from Poulo-Condor, Cochinchina, Vietnam. A key to help distinguish it from other Indochinese taxa in this genus will be found under *C. hahnianum* Dop in the present series of notes [60: 141--143].

Nothing is known to me of this plant beyond what is stated in its rather brief bibliography (above).

CLERODENDRUM LANKAIIENSE King & Gamble, Kew Bull. Misc. Inf. 1908: 110 [as "Clerodendron"]. 1908; Fletcher, Kew Bull. Misc. Inf. 1938: 404, 407, 424, & 426. 1938.

Synonymy: *Clerodendron lankawiense* King & Gamble, Kew Bull. Misc. Inf. 1908: 110. 1908. *Clerodendron langkawiense* K. & G. apud M. R. Henderson, Gard. Bull. Straits Settl. 7: 118. 1933.

Bibliography: King & Gamble, Kew Bull. Misc. Inf. 1908: 110. 1908; Gamble in King & Gamble, Journ. Asiatic Soc. Beng. 74 (2 extra): 826 & 830. 1908; Ridl., Journ. Roy. Asiatic Soc. Straits 59: 156. 1911; Prain, Ind. Kew. Suppl. 4, imp. 1, 50. 1913; H. J. Lam, Verbenac. Malay. Arch. 249 & 364. 1919; Bakh. in Lam & Bakh., Bull. Jard. Bot. Buitenz., ser. 3, 3: 95, 109, & IX. 1921; Ridl., Fl. Malay Penins. 2: 624 & 625. 1923; M. R. Henderson, Gard. Bull. Straits Settl. 7: 118. 1933; Fletcher, Kew Bull. Misc. Inf. 1938: 404, 407, 424, & 426--427. 1938; Mold., Known Geogr. Distrib. Verbenac., ed. 1, 55, 56, 60, 61, & 90. 1942; Mold., Alph. List Cit. 1: 268. 1946; Prain, Ind. Kew. Suppl. 4, imp. 2, 50. 1958; Anon., Kew Bull. Gen. Ind. 77. 1959; Mold., Résumé 165, 166, 177, 179, & 451. 1959; Mold., Fifth Summ. 1: 282, 285, 295, 304, & 307 (1971) and 2: 868. 1971; Mold., Phytologia 32: 46. 1975; Anon., Biol. Abstr. 61: AC1.581. 1976; Hocking, Excerpt. Bot. A.28: 171. 1976; Mold., Phytologia 34: 264. 1976; Mold., Phytol. Mem. 2: 272, 284, 295, 298, & 539. 1980; Brenan, Ind. Kew. Suppl. 16: 71. 1981; Mold., Phytologia 60: 198 (1986) and 61: 89 & 187. 1986.

A shrub; branchlets obtusely tetragonal, canaliculate, scabrid-puberulous; leaves decussate-opposite; petioles about 6 mm. long, scabrid-pubescent; leaf-blades chartaceous, oblong or oblong-lanceolate to oblanceolate or obovate, 7.5--10 cm. long, 1.2--2.5 cm. wide, apically acute, marginally entire, basally attenuate, subglab-

rous to sparsely hispid with jointed hairs on both surfaces, pubescent on the larger venation beneath; midrib stout; secondaries 8--10 pairs, curving arcuately upwards to and along the margins; tertiaries transverse, few, irregular; veinlets reticulate; inflorescence terminal, paniculate, pyramidal, leafy, thyrsoid, the lower ramifications axillary to the uppermost leaves, to 23 cm. long and 10 cm. wide, scabrid-pubescent; sympodia about 2.5 cm. long; cymes pedunculate, trichotomous, rather few-flowered; bracts foliaceous, lanceolate; bractlets small, setaceous; pedicels slender, about 4 mm. long; buds clavate, to 1.8 cm. long; calyx campanulate, externally scabrous-hispid, internally glabrous and with large peltate glands, cleft to about 2/3 the length, prominently venose, the lobes ovate, 4--6 mm. long, basally 2 mm. wide; corolla hypocrateriform, the tube slender, cylindric, about 1.2 cm. long, externally pubescent, the lobes obovate, spreading, the middle lobe of the lower lip longer than the others; stamens long-exserted; filaments very slender, glabrous; anthers oblong, 1 mm. long, with 2 parallel thecae; style very slender; stigma very shortly bilobed; ovary rounded, externally glabrous; fruit not known.

This species is based on *Curtis* 3789 from Terutan on Langkawi island, Kedah, Malaya, deposited in the Singapore herbarium. King & Gamble note that "Only one specimen of this species is available. It is near *C. Griffithianum*, Clarke, but differs in the inflorescence, calyx, &c."

Henderson (1933) comments that this species is probably related to *C. hispidum* M. R. Henderson, which, however, differs in its "ramis pubescensibus pilis longis, foliis multo latioribus, hispidis, petiolis longioribus, calyce maiore, tubo corollae multo breviore."

Collectors have encountered *C. lankawiense* in evergreen forests and in scrub near streams, from near sealevel to 900 m. altitude.

Ridley (1911) cites also Ridley 2515 from Langkawi; Fletcher (1938) cites Haniff & Nur 2084 & 2735 and Kerr 11722, 12927, 16283, 16283a, & 17525 from Thailand and Robinson 6257 from Langkawi. Bakhuizen (1921) lists the species from Malacca.

Citations: THAILAND: Put 2096 (Ed). MALAYAN ISLANDS: Langkawi: *Curtis* 3789 (N--photo of type, W--photo of type).

CLERODENDRUM LANKAWIENSE var. *ANDAMANENSE* Mold., *Phytologia* 32: 46. 1975.

Bibliography: Mold., *Phytologia* 32: 46. 1975; Anon., *Biol. Abstr.* 61: AC1.581. 1976; Hocking, *Excerpt. Bot. A.* 28: 171. 1976; Mold., *Phytologia* 34: 264. 1976; Mold., *Phytol. Mem.* 2: 274 & 539. 1980; Brenan, *Ind. Kew. Suppl.* 16: 71. 1981; Mold., *Phytologia* 61: 187. 1986.

This variety differs from the typical form of the species in having its leaf-blades perfectly elliptic, 6--25 cm. long, 2--10 cm. wide, acute at both ends or slightly subacute and very minutely apiculate at the apex and the calyx during anthesis conspicuously marked with crateriform glands on the outer surface.

The variety is based on an unnumbered Sulphiz Kurz collection from North Corbyna Cove on South Andaman Island in the Andaman Is-

lands and is deposited in the Munich herbarium.

Citations: ANDAMAN ISLANDS: South: Helfer 6046/1 (L); Kurz s.n. (Ld--photo of type, Mu--1149--isotype, Mu--3808--type).

CLERODENDRUM LANUGINOSUM Blume, Bijdr. Fl. Ned. Ind. 14: 810. 1826.

Synonymy: *Bignonia comosa* Roxb., Hort. Beng., imp. 1, [95] nom. nud. 1814; Fl. Indica, ed. 2, imp. 1, 3: 103. 1832 [not *B. comosa* Cham., 1832]. *Spathodea ? comosa* G. Don, Gen. Syst. 4: 222. 1838. *Clerodendron lanuginosum* Blume apud D. Dietr., Syn. Pl. 3: 617. 1842.

Bibliography: Roxb., Hort. Beng., imp. 1, [95]. 1814; Blume, Bijdr. Fl. Ned. Ind. 14: 810. 1826; Cham., Linnaea 7: 693. 1832; Roxb., Fl. Indica, ed. 2, imp. 1, 3: 103. 1832; G. Don, Gen. Syst. 4: 222. 1838; Steud., Nom. Bot. Phan., ed. 2, 1: 383. 1840; D. Dietr., Syn. Pl. 3: 617. 1842; Walp., Nov. Act. Nat. Cur. 19, Suppl. 1: 380. 1843; A. P. DC., Prodr. 9: 144. 1845; Walp., Repert. Bot. Syst. 4: 109. 1845; Schau. in A. DC., Prodr. 11: 672. 1847; Buek, Gen. Spec. Syn. Candoll. 3: 106. 1858; Miq., Fl. Ned. Ind. 2: 751 & 882. 1858; Miq., Ann. Mus. Bot. Lugd. 3: 253. 1867; Roxb., Fl. Indica, ed. 2, imp. 2, 3: 103. 1874; Jacks. in Hook. f. & Jacks., Ind. Kew., imp. 1, 1: 561. 1893; E. D. Merr., Philip. For. Bur. Bull. 1: 52. 1903; Pulle in Lorentz, Nova Guinea, ser. 1, 8: 403. 1911; H. Hallier, Meded. Rijks Herb. Leid. 37: 68. 1918; H. J. Lam, Verbenac. Malay. Arch. 293--294 & 364. 1919; Bakh. in Lam & Bakh., Bull. Jard. Bot. Buitenz., ser. 3, 3: 76, 90, 96, 109, & IX. 1921; E. D. Merr., Enum. Philip. Flow. Pl. 3: 402--403. 1923; Bakh. in Bakh. & Lam, Nova Guinea, ser. 1, 14, Bot. 1: 171. 1924; Mold., Alph. List Comm. Vern. Names 3, 19, 27, & 29. 1939; Mold., Known Geogr. Distrib. Verbenac., ed. 1, 62, 66, & 90. 1942; Mold., Phytologia 2: 100. 1945; Jacks. in Hook. f. & Jacks., Ind. Kew., imp. 2, 1: 561. 1946; Mold., Alph. List Cit. 1: 191. 1946; Mold., Alph. List Inv. Names Suppl. 1: 6. 1947; Mold., Alph. List Cit. 2: 449 (1948) and 4: 1155 & 1236. 1949; Mold., Known Geogr. Distrib. Verbenac., ed. 2, 141, 148, & 182. 1949; Mold., Biol. Abstr. 26: 1471. 1952; Van Steenis, Act. Bot. Neerl. 2: 305--306. 1953; Bremekamp, Biol. Abstr. 29: 2933. 1955; Mold., Résumé 183, 193, 199, 237, 265, 345, & 451. 1959; Jacks. in Hook. f. & Jacks., Ind. Kew., imp. 3, 1: 561. 1960; Mold., Fifth Summ. 1: 316, 322, 332, 396, & 449 (1971) and 2: 623 & 868. 1971; Roxb., Fl. Indica, ed. 2, imp. 3, 3: 103. 1971; Altschul, Drugs Foods 248. 1973; Mold., Phytol. Mem. 2: 306, 313, 322, & 539. 1980; Roxb., Hort. Beng., imp. 2, [95]. 1980; P. Holmgren & al., Ind. Vasc. Pl. Type Microf. 441. 1985; Mold., Phytologia 57: 467 & 468 (1985), 58: 448 (1985), 59: 119 (1986), and 61: 413. 1986.

A shrub, 3--7 m. tall; stems to 6.5 cm. in diameter; branches and branchlets densely lanuginous; leaves decussate-opposite, petiolate; petioles densely lanuginous; leaf-blades chartaceous, ovate, apically acuminate, marginally distantly serrate-dentate or denticulate, subentire when young, basally usually subcordate, softly pubescent on both surfaces; calyx campanulate, 1--1.5 cm. long, purple, externally lanuginous with wide-spreading hairs, deeply 5-fid, the segments apically acuminate; corolla hypocrateriform, white; fruit drupeaceous, purple.

Blume's original (1826) description of this plant is: "*C. foliis oppositis ovatis acuminatis basi interdum subcordatis remote denticulatis utrinque mollibus junioribus (subintegerrimis) ramulis calicibusque (externe) lanuginosis, pedunculis dichotomis (calix campanulatus, quinquefidus, laciiniis acuminatis).* Crescit: in montosis insularum Moluccanarum. Floret: toto anno."

Hallier (1918) comments, in speaking of *C. lanuginosum*: "Elmer no. 11338 vom Berge Apoh auf Mindanao gehört nicht zu dieser Art, sondern ist wohl nur eine stärker behaarte Abart des nahe verwandten *Cl. Preslii* Elm. (Negros: Elmer no. 10223), das durch seine violett-rothen Kelche seine nahe Verwandtschaft zu den letzten beiden Arten [*C. catalpifolium* H. Hallier & *C. brunfelsiiflorum* H. Hallier], in der Form des Kelches aber auch eine solche zu *Cl. Minahassae* T. et B. bekundet." It should be noted that Elmer 11338, mentioned above, is the type collection of *C. macrocalyx* H. J. Lam, which see.

Van Steenis (1953), in speaking of *Bignonia comosa* Roxb., says: "The identity of this species, described from the Moluccas, has up till now remained obscure. An authentic specimen (possibly an isotype) is present at Brussels, in the herbarium of v. Martius, with Roxburgh's handwriting and addition of the number '2652'. However, this sheet, which was kindly loaned by Prof. Robijns, does not wholly conform to the description; it contains a leafy twig, and a detached fruit, whereas the description points to leaves and flowers only. On the other hand the leaves exactly match the description. Both Dr. Merrill and I myself are of the opinion that the leaves doubtless represent a *Clerodendron* (Verbenaceae). The capsule apparently belonging to a separate small label on which is written: 'Capsule of No 14 Pou Madyro an *Bignonia*', we find doubtless bignonaceous (but not *Bignonia chelonoides*, Roxb. l.c. 106), and I can add that it belongs to a species which is certainly not native in Malaysia, but presumably in SE. Asia. I assume the pod was added later, anyhow erroneously to the sheet, as it was not mentioned in the type description. The leaves, therefore, should be taken as typifying Roxburgh's species. In verifying these leaves with the Rijksherbarium collections I have found them exactly matching those of *Clerodendron lanuginosum* Bl. (1825). *Bignonia comosa* Roxb. is therefore to be added to the synonymy of the latter."

Collectors have encountered *Clerodendrum lanuginosum* in secondary forests, old clearings, along roadsides, and on coral-limestone strand, from sealevel to 50 m. altitude, in flower in April and from June to November, in fruit in July and October, but Blume avers that it flowers all through the year. Olsen comments that it is "common in secondary forests" on Tawi-tawi island.

The corollas are described as "white" on all collections where any note at all is made of flower color (viz., DeBruyn 38 δ , Ebalo 897, Teijsmann 5243 & 5631, and Williams 3120. Edano 239 [Herb. Philip. Bur. Sci. 75881], tentatively cited below, is said to have had whitish-pink flowers and black stamens and may prove not to be this species or even verbenaceous at all.

Distinctly serrate leaf-blades may be seen on Sattnam 81, Beguin 961, and Herb. Philip. Bur. Sci. 41803 & 44009, and finely denticu-

late ones on Williams 3120.

Dietrich (1843) lists *C. lanuginosum* from Java -- and only from there -- but this is probably an error since he quotes only Blume's original description wherein the species is plainly accredited, not to Java, but to the Molucca Islands.

Bakhuizen lists the species from the Philippines, the Moluccas, and New Guinea [West Irian, Biak & Schouten islands].

A key to help distinguish this species from other Indonesian taxa will be found under *C. klemmei* Elm. in the present series of notes [61: 410--415].

Vernacular names recorded for *C. lanuginosum* are "antutuñgau-taluk", "asni", "derunal", "magalablab", "mal-mal", "paiton", "pait-pait", "salumpapait", "takipan", "tanogo", and "tingkao".

Hallier (1918) cites *Collector undetermined s.n.* from Ternate, De Vriese & Teijsmann s.n. from Ceram, and Reinwardt s.n. from Banda. Merrill (1921) cites Alviar, Philip. For. Bur. 25911, Elmer 13559, Hallier s.n., Merrill 8239, Ramos 14477, Ramos & Edaño 38617, Reillo 15404, and Weber 1102 from Basilan, Camiguin de Misamis, and Mindanao, in the Philippines, noting that in the Philippines the species occurs "In thickets and secondary forests at low altitudes". He gives as extra-limital distribution Banda, Ceram, and Ternate.

Altschul (1973) cites Añonuevo 210 and Frake 588 from the Philippines, reporting that there the leaves are used medicinally to treat splenomegaly (enlargement of the spleen) and that the scraped off bark is applied to the forehead to treat headaches.

It may be noted here that the original Blume (1826) reference in the species' bibliography is sometimes cited, erroneously, as part "9" and dated "1825".

Olsen 673, on its collector's label, indicates that the "flowers" were "purple", but only fruits, not flowers, appear on the specimen, so it is most probable that it is fruit color, and not corolla color, that was intended by the notation.

The Edaño, Philip. Bur. Sci. 41803 and Ramos & Edaño, Philip. Bur. Sci. 44009 collections, cited below, were erroneously mis-cited by me as representing *C. cumingianum* Schau. in a previous installment of the present notes -- the former was actually so regarded by both Bakhuizen and Merrill, but examination shows the calyx far too broad for that taxon.

Bakhuizen (1921) includes a "*Clerodendron pubescens* Walp." in the synonymy of *C. lanuginosum*, but this binomial belongs, instead, in the synonymy of *C. viscosum* Vent.

Material of *Clerodendrum lanuginosum* has been misidentified and distributed in some herbaria as *C. adenophysum* H. Hallier, *C. cumingianum* Schau., *C. macrostegium* Schau., *C. philippinum* Schau., and *C. villosum* Blume. On the other hand, the Blinneneijer 2414, distributed as *C. lanuginosum*, actually is the type collection of *C. leparensense* Mold., while Ahern 691, Antonio, Philip. Bur. Sci 31154, Clemens 1960, DeVore & Hoover 173, Elmer 11338, Lagrimas 213, Mal-longa, Philip. For. Bur. 26265, Ramos & Pascasio, Philip. Bur. Sci. 35024, and Wenzel 2621 & 3376 are *C. macrocalyx* H. J. Lam (the Elmer 11308 collection being its type collection) and Bartlett 15567 is

C. villosum Blume.

Citations: PHILIPPINE ISLANDS: Basilan: Ebalo 897 (Mi). Jolo: R. S. Williams 3120 (N, N). Leyte: Edaño, Philip. Bur. Sci. 41803 (Bz--19103, Ca--239645). Luzon: Edaño, Philip. Bur. Sci. 75831 (N); Loher 4421 [=Vidal 1650"] (Mu). Mindanao: Frake & Frake 162 [Philip. Nat. Herb. 36023] (W--2277029); Ramos & Edano, Philip. Bur. Sci. 38617 (Bz--19901, W--1292230); Zwickey 13 (Mi, N). Tawi-tawi: S. Olsen 673 (Cp), 687 (Cp), 776 (Cp); Ramos & Edano, Philip. Bur. Sci. 44009 (B, Bz--19106, Ca--257643, N). Island undetermined: Herb. N. Y. Bot. Gard. s.n. (N). GREATER SUNDA ISLANDS: Kalimantan: Schuitemaker 107 (Bz--20952, Bz--20953, Bz--20954). MOLUCCA ISLANDS: Batjan: Teijsmann 5631 (Bz--19891, Bz--19892). Halmahera: Anang 648 (Bz--72997), 637 (Bz--72913); Lam 3727 (Bz--19898). Morotai: Main & Aden 1489 (Bz--72714). Obi: Atasrip 84 (Bz--19893, Bz--19894, Bz--26622, Bz--26623); Saltnam 81 (Bz--19895, Bz--19896, Bz--19897). Ternate: Anang 83 (Bz--72996); Beguin 961 (Bz--19900); Teijsmann 5243 H.B. (Bz--19899, Ut--43904). LOCALITY OF COLLECTION UNDETERMINED: Zollinger 1143 (Ut--43905).

CLERODENDRUM LANUGINOSUM var. *ADPRESSIPILUM* Mold., Phytologia 4: 49. 1952.

Bibliography: Mold., Biol. Abstr. 26: 1471. 1952; Mold., Phytologia 4: 49. 1952; Mold., Résumé 183 & 451. 1959; Mold., Fifth Summ. 1: 316 (1971) and 2: 868. 1971; Mold., Phytol. Mem. 2: 306 & 539. 1980; P. Holmgren & al., Ind. Vasc. Pl. Type Microf. 441. 1985; Mold., Phytologia 59: 119. 1986.

This variety differs from the typical form of the species only in having the dense pubescence closely appressed to the exterior of the calyx.

The variety is based on Elmer 13559 from Cabadbaran, Mt. Urdaneta, in the Province of Agusan, Mindanao, Philippine Islands, collected in August, 1912, and deposited in the Buitenzorg herbarium.

The type and thus far only known collection of this taxon was previously misidentified and distributed in herbaria as *C. cumingianum* Schau.

Citations: PHILIPPINE ISLANDS: Mindanao: Elmer 13559 (Bi-isotype, Bz--19109--type, Ld--photo of type, N--isotype, N--photo of isotype, W--1172281--isotype).

CLERODENDRUM LASIOCEPHALUM C. B. Clarke in Hook. f., Fl. Brit. India 4: 594 [as "Clerodendron"]. 1885; Mold., Prelim. Alph. List Inv. Names 20. 1940.

Synonymy: *Clerodendron lasiocephalum* C. B. Clarke in Hook. f., Fl. Brit. India 4: 594. 1885. *Clerodendron lasiocephalus* C. B. Clarke ex Mold., Prelim. Alph. List Inv. Names 20 in syn. 1940. *Clerodendron lasiocephalum* C. B. Clarke apud Nath, Bot. Surv. South. Shan States 305. 1960.

Bibliography: C. B. Clarke in Hook. f., Fl. Brit. India 4: 594. 1885; Collett & Hemsl., Journ. Linn. Soc. Lond. Bot. 28: 111. 1890; Jacks. in Hook. f. & Jacks., Ind. Kew., imp. 1, 1: 561. 1893; Brändis, Indian Trees, imp. 1 & 2, 507--508 (1906), imp. 2a, 507--508

(1907), imp. 3, 507--508 (1911), and imp. 4, 507--508. 1921; Rodger in Lace, List Trees Shrubs Burma, ed. 2, 132. 1922; Fletcher, Kew Bull. Misc. Inf. 1938: 405, 407, 425, & 430. 1938; Kanjilal, Das, Kanjilal, & De, Fl. Assam, imp. 1, 3: 486, 489, & 546. 1939; Mold., Prelim Alph. List Inv. Names 20. 1940; C. E. C. Fischer, Kew Bull. Misc. Inf. 1940: 299. 1941; Mold., Alph. List Inv. Names 18. 1942; Mold., Known Geogr. Distrib. Verbenac., ed. 1, 54 & 90. 1942; Jacks. in Hook. f. & Jacks., Ind. Kew., imp. 2, 1: 561. 1946; Mold., Alph. List Cit. 1: 105. 1946; Mold., Known Geogr. Distrib. Verbenac., ed. 2, 126 & 182. 1949; E. J. Salisb., Ind. Kew. Suppl. 11: 56. 1953; Anon., Kew Bull. Gen. Ind. 77. 1959; Mold., Résumé 161, 265, & 451. 1959; Jacks. in Hook. f. & Jacks., Ind. Kew., imp. 3, 1: 561. 1960; Nath, Bot. Surv. South. Shan States 305. 1960; Deb, Bull. Bot. Surv. India 3: 314. 1961; Hundley & Ko in Lace, Trees Shrubs Burma, ed. 3, 203. 1961; Rao & Rabha, Bull. Bot. Surv. India 8: 301. 1966; Panigrahi & Joseph, Bull. Bot. Surv. India 8: 151. 1966; Mold., Résumé Suppl. 15: 18. 1967; Pande, Bull. Dept. Med. Pl. Nepal 1: 36. 1967; Mold., Résumé Suppl. 16: 9. 1968; Brandis, Indian Trees, imp. 5, 507--508. 1971; Mold., Fifth Summ. 1: 273, 282, & 449 (1971) and 2: 868. 1971; Mold., Phytologia 28: 444. 1974; Mold., Phytol. Mem. 2: 259, 272, & 539. 1980; Kanjilal, Das, Kanjilal, & De, Fl. Assam, imp. 2, 486, 489, & 546. 1982; Mold., Phytologia 54: 238 (1983), 60: 135 (1986), and 61: 90. 1986.

A shrub, to about 3.3 m. tall; branchlets antrorsely pubescent or tomentose; leaves decussate-opposite; petioles 2.5--15 cm. long; leaf-blades membranous, ovate or elliptic-oblong, 8--25 cm. long, 6--13 cm. wide, apically acuminate, marginally dentate, basally cuneate or rounded, sparsely pubescent or tomentose on both surfaces; secondaries 5--7 per side; inflorescence paniculate, terminal, erect, subcapitate, sessile, 5--7.5 cm. wide, depressed globose, pubescent, the cymes compact, corymbiform, subcapitate; bracts linear; flower-buds violet; calyx pubescent, about 1.8 cm. long, divided nearly to the base, the segments flaccid, lanceolate or triangular-lanceolate, 1.2--2 cm. long, apically acuminate or caudate, basally subcordate, pubescent; corolla hypocrateriform, the tube slender, 2.5--4 cm. long, the limb 5-lobed, the lobes oblong or obovate, about 8 mm. long; fruit drupaceous, about 8 mm. wide, red.

This little-known species is based on W. Griffith 6055 from the Mishmee hills in Upper Burma. Brandis (1906) lists the species as from "Mishmi and Duffa hills. Khasi hills. Shan hills, Upper Burma". Rao & Ragha (1966) record it from Assam, while Panigrahi & Joseph (1966) describe it as "scarce" in Nefia.

Collectors have encountered the species in secondgrowth, at 550 m. altitude, in flower in May. Deb asserts that it is "frequent in valleys" in Manipur, while Kanjilal and his associates (1939) assert that it flowers from April to July in Assam and fruits there at the end of the rainy season.

Vernacular names recorded for *C. lasiocephalum* are "pet pein", "pet-pein", and "syntew-domahi".

Collett & Hemsley (1890) cite Aplin s.n. from the Shan States of Burma; Fletcher (1938) cites only Winit 784 from Thailand; Deb (1961)

cites Deb 173 from Manipur and Panigrahi & Joseph (1966) cite their no. 15074 from Nefia. Pande (1967) lists the species from Nepal.

Keys to help distinguish *C. lasiocephalum* from other Indian and Assam taxa will be found under *C. griffithianum* C. B. Clarke in the present series of notes [60: 134--136] and from other Thailand taxa under *C. inerme* (L.) Gaertn. [61: 88--90].

It would appear that this species is very closely related to (if not identical with) the ancestral form of *C. philippinum* Schau.; in fact, the *Ihapa* & Pradhan 4449, distributed as *C. lasiocephalum*, actually is *C. philippinum*.

Citations: INDIA: Assam: C. B. Clarke 44122a (L). BURMA: Upper Burma: Khalil s.n. [1893] (W--369344).

CLERODENDRUM LASTELLEI Mold., Lloydia 13: 206. 1950.

Bibliography: Mold., Lloydia 13: 206. 1950; E. J. Salisb., Ind. Kew. Suppl. 11: 56. 1953; Mold. in Humbert, Fl. Madag. 174: 152, 204--206, & 268, fig. 33 (2). 1956; Mold., Résumé 155 & 451. 1959; Mold., Fifth Summ. 1: 260 (1971) and 2: 868. 1971; Mold., Phytol. Mem. 2: 249 & 539. 1980; P. Holmgren & al., Ind. Vasc. Pl. Type Microf. 441. 1985; Mold., Phytologia 58: 187. 1985.

Illustrations: Mold. in Humbert, Fl. Madag. 174: 205, fig. 33 (2). 1956.

A shrub; branchlets and twigs slender, grayish, obtusely tetragonal, often sulcate, sparsely lenticellate, glabrous; nodes not annulate; principal internodes 1.3--2.8 cm. long; leaves decussate-opposite; petioles slender, about 4 mm. long, glabrous; leaf-blades lightly coriaceous, uniformly bright-green on both surfaces, elliptic, shiny, 3--5 cm. long, 1.2--2.3 cm. wide, apically acute or slightly subacuminate, marginally entire, basally acute, glabrous on both surfaces; midrib slender, flat above, prominent beneath; secondaries very slender, 2--6 per side, irregular, ascending, arcuately joined near the margins beneath, obscure or sub prominulous above; veinlet reticulation rather sparse, only the largest parts prominulous beneath, obscure above; inflorescence apparently terminal, cymose, few-flowered, usually only 3-flowered; peduncles slender, about 2.5 cm. long, glabrous, stramineous; pedicels comparatively stout, stramineous, 1.5--2 cm. long, glabrous; calyx coriaceous but not heavy, stramineous, not nigrescent, conspicuously veined, tubular-campanulate, about 2 cm. long, glabrous, its 5 lobes ovate, erect, about 5 mm. long, apically acute; corolla hypocrateriform, its tube very narrowly cylindric, 2 cm. long, externally glabrous, the limb about 2 cm. wide; stamens and pistil exserted 2--3 cm. from the corolla-mouth; fruiting-calyx and fruit not known.

This endemic Madagascar species is based on an unnumbered Lastelle collection, collected in 1841, and deposited in the Paris herbarium. It is known to me thus far only from the original collection. A key to help distinguish it from other Madagascar taxa will be found under *C. baronianum* Oliv. in the present series of notes [58: 184--190].

Citations: MADAGASCAR: Lastelle s.n. [1841] (E--photo of type, F--photo of type, Ld--photo of type, N--fragment of type, N--photo of type, P--type).

CLERODENDRUM LATIFOLIUM Friedrich, Abh. Geol. Specialkarte Preuss. 4 (3): 339 [181], pl. 23, fig. 4, & pl. 28, fig. 14 [as "Clerodendron"]. 1883; Mold., Prelim. Alph. List Inv. Names 20. 1940.

Synonymy: *Clerodendron latifolium* Friedrich, Abh. Geol. Specialkarte Preuss. 4 (3): 339 [181]. pl. 23, fig. 4, & pl. 28, fig. 14. 1883.

Bibliography: Friedrich, Abh. Geol. Specialkarte Preuss 4 (3): 339 [181], pl. 23, fig. 4, & pl. 28, fig. 14. 1883; Mold., Prelim. Alph. List Inv. Names 20. 1940; Mold., Alph. List Inv. Names 18. 1942; Mold., Known Geogr. Distrib. Verbenac., ed. 1, 75 & 90. 1942; H. N. & A. L. Mold., Pl. Life 2: 42. 1948; Mold., Known Geogr. Distrib. Verbenac., ed. 2, 166 & 182. 1949; Mold., Résumé 226, 265, & 451. 1959; Mold., Fifth Summ. 1: 375 & 449 (1971) and 2: 868. 1971; Mold., Phytol. Mem. 2: 368 & 539. 1980; Mold., Phytologia 57: 345. 1985.

Illustrations: Friedrich, Abh. Geol. Specialkarte Preuss. 4 (3): pl. 23, fig. 5, & pl. 28, fig. 14. 1883.

This species is described from the Oligocene of Germany.

CLERODENDRUM LAXICYMOVUM DeWild., Bull. Jard. Bot. Brux. 7: 171 [as "Clerodendron"]. 1920; B. Thomas, Engl. Bot. Jahrb. 68: [Gatt. Clerod.] 68. 1936.

Synonymy: *Clerodendron laxicymosum* DeWild., Bull. Jard. Bot. Brux. 7: 171. 1920.

Bibliography: DeWild., Bull. Jard. Bot. Brux 7: 171. 1920; De Wild., Pl. Bequaert. 2: 262--264. 1922; A. W. Hill, Ind. Kew. Suppl. 6, imp. 1, 49. 1926; Fedde & Schust., Justs Bot. Jahresber. 48 (1): 497 (1927) and 53 (1): 1072. 1932; B. Thomas, Engl. Bot. Jahrb. 68: [Gatt. Clerod.] 39, 68, & 94. 1936; Mold., Known Geogr. Distrib. Verbenac., ed. 1, 48 & 90 (1942) and ed. 2, 115 & 182. 1949; A. W. Hill, Ind. Kew. Suppl. 6, imp. 2, 49. 1959; Mold., Résumé 137, 141, 143, & 451. 1959; Mold., Fifth Summ. 1: 220, 229, & 233 (1971) and 2: 868. 1971; Mold., Phytologia 31: 395. 1975; Mold., Phytol. Mem. 2: 210, 219, 223, 387, & 539. 1980; P. Holmgren & al., Ind. Vasc. Pl. Type Microf. 441. 1985; Mold., Phytologia 58: 206, 298, & 299. 1985.

A branched, climbing shrub, 2--4 m. tall, or liana, branched from the base, glabrous almost throughout; stems often "as thick as a man's upper arm", spiny; leaves decussate-opposite or alternate, borne on long slender shoots; petioles 1.5--6 cm. long, more or less verrucose, articulate 1--3 mm. from the base, the basal portion persisting as a woody spine about 3 mm. long; leaf-blades oval or elliptic to obovate, 7--15 cm. long, 2--7.5 cm. wide, apically acuminate (the acumen itself obtuse or subacute), marginally entire, basally broadly cuneiform, glabrous on both surfaces; secondaries 6 or 7 per side, more prominent beneath than above, anastomosing in an arc before reaching the margins; inflorescence axillary and terminal, the cymes pedunculate, lax, to 19 cm. long; peduncles green, sometimes carrying 1 or 2 bud-traces, to 9 cm. long; rachis and ramifications of the inflorescence glabrous or very shortly puberulent, the lateral branches about 2 cm. long, dichotomous, 7-flowered;

bractlets linear, to 5 mm. long, ciliolate, caducous; pedicels 3--4 mm. long; flowers cauliflorous, often borne directly on the main stem far below the lowest leaves; calyx green, more or less campanulate, 7--9 mm. long, externally glabrous, the rim 5-toothed, the teeth deltoid, about 2.5 mm. long, apically subacute; corolla white or pale-rose, hypocrateriform, the tube slender, 8--9 mm. long, apically enlarged, the limb 5-lobed, the lobes reflexed, about 3 mm. long; stamens 4, white, exserted about 4 mm. from the corolla-mouth; anthers brown; pistil 1; style long-exserted.

This species is based on J. Bequaert 1844 from a secondary forest at Avakubi, Zaire, collected on January 9, 1914, and deposited in the Brussels herbarium.

Collectors have encountered this plant in forests and montane forests, often growing in clayey=sandy soil, at altitudes of 450--1780 m., in flower in April and from August to December. The only vernacular name recorded for it is "mbambake e boliki".

The corollas are described as having been "white" on Bequaert 6438, Eggeling 2271, Ghiesquieré 4229, and Gille 138 and "pale-rose" on Lebrun 6000.

DeWildeman (1920) observes that "Cette espèce se caractérise nettement par ses cymes axillaires et terminales, formant, semble-t-il, à l'extrémité des rameaux, d'amples inflorescences feuillées. Par ses cymes non capitées, ses fleurs petites, elle se classerait dans le groupe des espèces réunies par M. Baker (Flora of trop. Africa, V p. 293) sous les n. 7-20; les trois dernières étant écartées par la forme cordée des feuilles. Il est malheureusement plus difficile de la classer dans une des deux sections: Feuilles oblongues (n. 7--15). Feuilles ovales, arrondies à la base (n. 16--18). Car, sur le même rameau, nous observerons des feuilles: franchement ovales, elliptiques et mêmes obovales. Il est aisé d'écartier toute une série des espèces de cette subdivisions par la pubescence de leurs feuilles. Quant au caractère sur lequel M. Baker attire l'attention pour séparer *C. kentrocaule* Baker, *C. glabrum* Meyer, *C. volubile* Pal. Beauv. et *C. formicarum* Gürke: base du pétiole persistante dans la première, il nous paraît de faible valeur, car il existe, entre autres, nettement chez le *C. volubile* Pal. Beauv., qui en serait privé."

Gille describes *C. laxicymosum* as a "grosse liane dépendant autour de forte tronc, a aspect tordu; les fleurs constituées en grappe sont portées sur une petite hampe florale delaquelle partent opposées deux a deux, les pédicelles rigoureusement horizontaux de l'extrémité desquels sortent 5fleur côte à côte". He states that in Zaire the stems are used to make liana bridges over streams. This is the only species in the Verbenaceae that I know of which is used for this purpose.

A key that may prove helpful to distinguish *C. laxicymosum* from some of its near relatives is the following:

1. Leaf-blades always marginally entire.

2. Inflorescence mostly cauliflorous at or near the base of the stems; larger branches mostly very conspicuously long-spiny; leaves mostly glabrous.

3. Inflorescence congested, often subcapitate.....*C. botryoides*.
 3a. Inflorescence not congested.
 4. Calyx narrow-elongate, 6--8 mm. long; leaf-blades thin-membranous, fragile in drying
 5. Petioles all short and entirely glabrous, 5--18 mm. long; calyx glabrous.....*C. silvestre*.
 5a. Petioles elongate, to 4 cm. long or longer, pubescent at least on the upper margin; calyx puberulent.....
 C. buchholzii.
 4a. Calyx broadly obconic; leaf-blades somewhat leathery, not fragile in drying.....*C. laxicymosum*.
 2a. Inflorescence plainly axillary or terminating the branchlets..
 C. thonneri.
 1a. Leaf-blades marginally more or less dentate....*C. tanganyikense*.
 It should be noted here that Fedde & Schuster (1927) mis-cite the type collection of *C. laxicymosum* as Bequaert "1814" instead of "1844", doubtless due to a typographic error. Thomas (1936) cites only Bequaert 1844 and Pogge 1203 from Zaire.
 Material of *C. laxicymosum* has been misidentified and distributed in some herbaria as *C. buchholzii* Gürke.
 Citations: GHANA: Vigne 4256 (Br). ZAIRE: Bequaert 1844 (Br--type, Ld--photo of type, N--fragment of type, N--photo of type), 6438 (Br); Ghesquière 4299 (Br); Gille 138 (Br, Br, Br, Br, Br); Lebrun 3904 (Br, Br, N), 3987 (Br, Br), 6000 (Br, Br, N), 6072 (Br), Br); B. Lemaire 149 (Br); Louis 13592 (Br), 15691 (Br); Renier 60 (Br, N). UGANDA: P. Chandler 1587 (N); Eggeling 2271 (Br).

CLERODENDRUM LAXIFLORUM J. G. Baker, Journ. Linn. Soc. Lond. Bot. 20: 229 [as "Clerodendron"]. 1883; Mold., Revist. Sudam. Bot. 8: 170. 1950.

Synonymy: *Clerodendron laxiflorum* J. G. Baker, Journ. Linn. Soc. Lond. Bot. 20: 229. 1883.

Bibliography: J. G. Baker, Journ. Linn. Soc. Lond. Bot. 20: 229. 1883; Jacks. in Hook. f. & Jacks., Ind. Lew., imp. 1, 1: 561 (1893) and imp. 2, 1: 561. 1946; Mold., Revist. Sudam. Bot. 8: 170. 1950; Mold. in Humbert, Fl. Madag. 174: 154, 223, 225-227, 266, & 268, fig. 36 (5 & 6). 1956; Mold., Résumé 155, 417, & 451. 1959; Jacks. in Hook. f. & Jacks., Ind. Kew., imp. 3, 1: 561. 1960; Mold., Fifth Summ. 1: 260 (1971) and 2: 770 & 868. 1971; Mold., Phytol. Mem. 2: 249 & 539. 1980; Mold., Phytologia 58: 189. 1985.

Illustrations: Mold. in Humbert, Fl. Madag. 174: 223, fig. 36 (5 & 6). 1956.

An erect shrub or small tree, to 10 m. tall; branchlets and twigs very slender, obtusely tetragonal, more or less densely puberulent or short-pubescent, sometimes somewhat compressed, lenticellate; leaf-scars large and corky; nodes not annulate; principal internodes 1.5--3 cm. long; leaves decussate-opposite or approximate, short-petiolate; petioles slender, 2-15 mm. long, more or less puberulent; leaf-blades membranous, brunnescens in drying, lighter beneath, elliptic, 2.5-9 cm. long, 1.5-4.5 cm. wide, apically acute or short-acuminate, marginally entire, narrowed from the middle to the

acute base, more or less puberulent (often densely so) on both surfaces (or glabrous, *fide* Baker); midrib slender, flat above, prominent beneath; secondaries filiform, 5--7 per side, obscure or indiscernible above, very slightly sub prominulous beneath, arcuate-ascending, arcuately joined in many loops near the margins; veinlet reticulation sparse, mostly obscure; inflorescence axillary and terminal, the axillary cymules mostly 3-flowered and lax, the terminal panicles composed of several pairs of cymes, densely puberulent or short-pubescent throughout; peduncles and panicle-ramifications very slender or subfiliform, 1-3 cm. long; pedicels filiform, 6--12 mm. long, densely puberulent; foliaceous bracts often present, 1-1.5 cm. long, 5--7 mm. wide, puberulent on both surfaces; bractlets similarly foliaceous or else linear-setaceous and much smaller; calyx greenish, tubular-campanulate or obconic, 1-1.8 cm. long, more or less densely puberulent, thin-membranous, venose-costulate, often subplicatulate, the tube 6--8 mm. in diameter, the rim distinctly 5-lobed, the lobes erect, triangular-ovate, 2--4 mm. long, apically acute; corolla yellow, hypocrateriform, the tube slender, basally cylindric, apically ampliate-infundibular, mostly 1.5--2 cm. long, externally glabrous, the limb about 1.5 cm. wide, the lobes spreading, 6--8 mm. long; stamens exserted 1--1.5 cm. from the corolla-mouth, usually reaching only to the tips of the corolla-lobes; style eventually slightly exserted beyond the stamens; fruit drupaceous, often insect-galled.

This endemic Madagascar species is based on Baron 1291 from forests in the Province of Imerina, Madagascar, and an unnumbered Parker collection from Andrangaloaka, in central Madagascar, collected in 1881, both deposited in the Kew herbarium.

Baker (1883) describes this species as "glabrous in all its parts", but this is not true of the specimens examined by me! The vernacular names, "tsimatadakato" and "yandrika", have been reported for it. The Index Kewensis states that the species is from the Fiji Islands, but this is an obvious error. It is endemic to Madagascar. Its leaves bear great resemblance to those of *C. arenarium* J. G. Baker, also of Madagascar.

Collectors have encountered *C. laxiflorum* in forests and in forest clearings, in flower in August and November, and in fruit in September. A key to help distinguish it from other Madagascar taxa in this genus will be found under *C. baronianum* Oliv. in the present series of notes [58: 184--190].

Material has been misidentified and distributed in some herbaria as *C. arenarium* J. G. Baker and *C. involucratum* Vatke.

Citations: MADAGASCAR: Baron 1291 (K--cotype, P--cotype), 5719 (P); d'Aleizette 1080m (P), 1363m (P); Decary 5190 (N, P); Grandidier s.n. [Cote sud-ouest] (P); Herb. Jard. Bot. Tananarive 2787 (P); G. W. Parker s.n. [Central Madagascar, 1881] (E--photo of cotype, F--photo of cotype, K--cotype, Ld--photo of cotype, N--photo of cotype).

CLERODENDRUM LEANDRII Mold., Lloydia 13: 207--208. 1950.

Thanks to the kindness of Dr. J. Leandri, who wrote to me in a letter dated October 29, 1955, it has been determined that this tax-

on is not a species of *Clerodendrum*, nor even verbenaceous, but is scrophulariaceous, probably a species of *Radamaea*.

CLERODENDRUM LECOMTEI Dop in Lecomte, Notul. Syst. 4: 11 [as "Clerodendron"]. 1920; Mold., Known Geogr. Distrib. Verbenac., ed. 1, 59 & 90. 1942.

Synonymy: *Clerodendron lecomtei* Dop in Lecomte, Notul. Syst. 4: 11. 1920.

Bibliography: Dop in Lecomte, Notul. Syst. 4: 11. 1920; A. W. Hill, Ind. Kew. Suppl. 6, imp. 1, 49. 1926; Fedde & Schust., Justs Bot. Jahresber. 48 (1): 497. 1927; Dop in Lecomte, Fl. Gén. Indo-chine 4: 852, 865, & 876, fig. 89 (1 & 2). 1935; Mold., Known Geogr. Distrib. Verbenac., ed. 1, 59 & 90. 1942; H. N. & A. L. Mold., Pl. Life 2: 68. 1948; Mold., Known Geogr. Distrib. Verbenac., ed. 2, 136 & 182. 1949; A. W. Hill, Ind. Kew. Suppl. 6, imp. 2, 49. 1959; Mold., Résumé 175 & 451. 1959; Mold., Fifth Summ. 1: 300 (1971) and 2: 868. 1971; Mold., Phytologia 31: 395. 1975; Mold., Phytol. Mem. 2: 291, 387, & 539. 1980; Mold., Phytologia 60: 142. 1986.

Illustrations: Dop in Lecomte, Fl. Gén. Indo-chine 4: 865, fig. 89 (1 & 2). 1935

A shrub, about 1.5 m. tall; branchlets tetragonal, canaliculate, lightly puberulent, soon glabrescent; bark whitish; leaves decussate-opposite; petioles 5--10 mm. long, canaliculate above; leaf-blades oblong or lanceolate, 9--22 cm. long, 3--6 cm. wide, apically acuminate, marginally entire, basally long-attenuate and acute, green even in drying, glabrous on both surfaces; secondaries 8 per side, very slender, arcuate; vein and veinlet reticulation inconspicuous; panicles racemiform, lax, almost leafless, subglabrous, perhaps nutant, about 20 cm. long and 10 cm. wide; peduncles slender, about 3 cm. long; cymes dense, trichotomous; bracts foliaceous, perhaps deciduous; bractlets linear, 5 mm. long, apically acute; calyx spreading-campanulate, 4 mm. long, externally lightly puberulent, the tube obsolete, the lobes lanceolate, basally 1 mm. wide; corolla hypocrateriform, orange-yellow, 2.5 cm. long, the tube slender, 1.8 cm. long, recurved, the lobes ovate, 7 mm. long, apically obtuse; stamens slightly exserted; ovary globose; style slender; stigma shortly bifid; fruit not known.

This species is based on Lecomte & Finet 241 & 249 from Lang-son, Tonkin, Vietnam.

Dop (1920) comments that "Cette espèce est voisine de la précédente [*C. tonkinense* Dop]; elle s'en distingue par la forme des feuilles et l'inflorescence racemiforme". A key to help distinguish it from other Indochinese taxa will be found under *C. hahnianum* Dop in the present series of notes [60: 141--143]. Nothing is known to me of it beyond what is stated in its bibliography (above).

CLERODENDRUM LEARENSE Mold., Phytologia 4: 49--50. 1952.

Bibliography: Mold., Biol. Abstr. 26: 1471. 1952; Mold., Phytologia 4: 49--50. 1952; Mold., Résumé 197 & 451. 1959; G. Taylor, Ind. Kew. Suppl. 12: 36. 1959; Mold., Fifth Summ. 1: 330 (1971) and 2: 868. 1971; Mold., Phytol. Mem. 2: 320 & 539. 1980; P. Holmgren & al.,

Ind. Vasc. Pl. Type Microf. 441. 1985.

A tall tree; only the very small leaves from directly beneath the inflorescence known, these leaves have their petioles 8-11 mm. long, very densely yellow-tomentose-pubescent, the blades chartaceous, elliptic, 1.7-4 cm. long, 7-14 mm. wide, apically long-apiculate, marginally entire, basally obtuse, rather sparsely pilosulous above, more densely so on the midrib, rather densely yellow-puberulent beneath, especially on the midrib, the apiculum densely yellowish-puberulent; inflorescence apparently axillary, surpassing the subtending leaves, possibly aggregated in a dense terminal cluster, each cymule apparently 3-flowered, borne on a stout, medullose peduncle which is 3-5 cm. long and densely yellowish-short-pubescent, the 3 cyme-branches are each 1 cm. long, the pedicels are about 1 cm. long, exactly similar to the cyme-branches in texture, color, and pubescence; calyx tubular-campanulate, 13-15 mm. long, 6-8 mm. wide, nigrescent, externally densely pilose-puberulent, the rim 5-lobed, the lobes ovate, 4-5 mm. long, apically attenuate.

This poorly known species is based on Blinnemeijer 2414 from Lepar island, near Banka, in the Molucca Islands, collected on December 12, 1917, and deposited in the Buitenzorg herbarium. Bakhuizen, in his revision of this family in 1920, annotated the type specimen as *C. lanuginosum* Blume, from which, however, it differs widely. In fact, with the known material so fragmentary, it is uncertain as to the exact taxonomic position of this plant. It is to be hoped that a new expedition to Lepar may produce more complete material.

Citations: MOLUCCA ISLANDS: Lepar: Blinnemeijer 2414 (Bz--19908--type, Ld-photo of type, N--fragment of type, N--photo of type).

CLERODENDRUM LEPRIEURI Mold., Phytologia 4: 50. 1952.

Bibliography: Mold., Biol. Abstr. 26: 1471. 1952; Mold., Phytologia 4: 50. 1952; Mold., Résumé 135, 136, & 451. 1959; G. Taylor, Ind. Kew. Suppl. 12: 36. 1959; Mold., Fifth Summ. 1: 214 & 215 (1971) and 2: 868. 1971; Mold., Phytol. Mem. 2: 225 & 539. 1980.

A shrub; branchlets slender, very obscurely tetragonal, densely ferruginous- or fulvous-villlose, more densely so on the younger parts; nodes not annulate; principal internodes 1.8-3.5 cm. long; leaves decussate-opposite; petioles medium-slender, 3-10 mm. long, densely ferruginous-villlose, borne on stiff spine-like sterigmata 2-6 mm. long; leaf-blades thin-chartaceous, bright-green above, lighter beneath, ovate-elliptic, 3-8 cm. long, 2-4.3 cm. wide, apically acuminate, marginally entire, basally rounded or cordate, rather sparsely long-pilose above, very densely ferruginous-tomentose beneath; midrib slender, flat or subimpressed above, prominent beneath; secondaries slender, 6-8 per side, arcuate-ascending, flat or subimpressed above, prominulous beneath, anastomosing near the margins; veinlet reticulation rather abundant, obscure above, hidden by the tomentum beneath; inflorescence terminal, capitate or subcapitate, densely many-flowered, about 2 cm. long and 2-3 cm. wide; peduncles and inflorescence ramifications abbreviated, densely ferruginous-villous; pedicels 1 mm. long or obsolete, ferruginous-villous; bractlets linear or filiform, 5 mm. long or longer, villous;

calyx campanulate, about 3 mm. long, externally sparsely villous, its rim with 4 elongate-filiform lobes about 3 mm. long, villous; corolla about 1 cm. long, the limb about 5 mm. wide.

This species is based on an unnumbered Leprieur collection from the Gambia, collected in about 1830, and deposited in the Stockholm herbarium. The plant has much the general appearance of *Premna chrysocladia* (Bojer) Gürke from the same general area.

Citations: SENEGLA: Leprieur s.n. [1830] (N, V--70998). GAMBIA: Leprieur s.n. (Ld--photo of type, N--photo of type, S--type).

CLERODENDRUM LEUCOPHLOEUM Balf. f., Proc. Roy. Soc. Edinb. 12: 91

[as "Clerodendron leucophoeum" sphalm]. 1884; A. R. Sm., Hook. Icon. Pl. 37 [ser. 5, 7]: pl. 3691. 1971.

Synonymy: *Clerodendron leucophoeum* Balf. f., Proc. Roy. Soc. Edinb. 12: 91 sphalm. 1884. *Clerodendron leucophloeum* Balf. f., Trans. Roy. Soc. Edinb. 31: 236. 1888.

Bibliography: Balf. f., Proc. Roy. Soc. Edinb. 12: 91. 1884; Balf. f., Trans. Roy. Soc. Edinb. 31: 236--237. 1888; Jacks. in Hook. f. & Jacks., Ind. Kew., imp. 1, 1: 561 (1893), imp. 2, 1: 561 (1946), and imp. 3, 1: 561. 1960; Anon., Kew Rec. Tax. Lit. 270. 1971; A. R. Sm., Hook. Icon. Pl. 37 [ser. 5, 7]: pl. 3691. 1971; Anon., Assoc. Étud. Tax. Fl. Afr. Trop. Ind. 1971: 57. 1972; Mold., Phytol. Mem. 2: 253, 387, & 539. 1980.

Illustrations: A. R. Sm., Hook. Icon. Pl. 37 [ser. 5, 7]: pl. 3691. 1971.

A strong-smelling, often stunted shrub or small tree, to 2.5 m. tall, dichotomously branched; bark white, lenticellate; the ultimate branchlets angulate, fulvous-tomentose, the terminal ones' elongate, the lateral ones often contracted; leaves small, decussate-opposite; petioles to 8 mm. long, pubescent; leaf-blades thinly membranous, oblong-elliptic or elliptic-obovate to obovate, 1.6--6.5 cm. long, 0.8--3 cm. wide, apically obtuse or rarely subacute or emarginate, marginally entire, basally attenuate or cuneate, sparsely glandular-puberulent above, pubescent beneath, becoming glabrescent, nigrescent above in drying; inflorescence axillary toward the tips of the branchlets, cymose, mostly 3-flowered, long-pedunculate, opposite, bracteose and bracteolose; peduncles to 3 cm. long, pubescent, articulately above the middle and bibracteolate; bracts and bractlets 1--2 mm. long, pubescent; flowers pedicellate; pedicels about 3 mm. long; calyx campanulate, 5-lobed, the tube 2 mm. long, the lobes 1 mm. long, apically obtuse, densely pubescent; corolla hypocrateriform, white or whitish, somewhat zygomorphic, the tube 5 mm. long, inflated, externally glabrous, internally puberulent at the mouth, the limb 5-lobed, the posterior lobe cucullate-crested and 7 mm. long, the remainder 6 mm. long; stamens 4, inserted in the corolla-tube, 1.9--2 cm. long; anthers 1.5 mm. long, verruculose; style 1.5 cm. long; stigma bifid; ovary 2 mm. long, dark-green, 4-lobed, glabrous; fruiting-calyx conspicuously accrescent and spreading; fruit drupaceous, nodding, somewhat fleshy, about 1 cm. wide, 4-lobed, the endocarp thin, crustaceous.

This endemic species was definitely based by Balfour (1884) on

Balfour, Cockburn, & Scott 182 & 385 and, in 1888, on nos. 182 & 335, all from Socotra and deposited in the Edinburgh herbarium, but Smith (1971) has arbitrarily designated Balfour, Cockburn, & Scott 335 as the type collection.

Although Balfour described this as "a very common tree" on the island in 1880, when he collected it in fruit in February and March, Smith, in 1971, reports that "only the one small clump of bushes was encountered on the 1967 expedition, and these in an area not easily accessible to goats". It thus appears that the species has almost been exterminated through the browsing by introduced goats.

The species is obviously a member of the Subgenus *Cyclonema* and is known locally as "seminha". Originally, before the introduction of goats, it was abundant on the plains and up to 2000 feet elevation on the peaks, mostly at the base of coralline limestone cliffs. Balfour, Cockburn, & Scott 513 is said to have differed in being "quite inodorous"; no. 385 was faintly odorous even when dry.

Balfour (1888) cited only Balfour, Cockburn, & Scott 182, 265, 335, 385, 513, & 580; Smith (1971) cites the same collections plus Smith & Lavranos 607.

Citations: MOUNTED ILLUSTRATIONS: A. R. Sm., Hook. Icon. Pl. 37 [ser. 5, 7]: pl. 3691. 1971 (Ld).

CLERODENDRUM LEVEILLEI Fedde ex Levl., Cat. Pl. Yun-nan 277 [as "Clerodendron"]. 1917; Mold., Known Geogr. Distrib. Verbenac., ed. 2, 131 & 182. 1949.

This taxon, previously accepted by me in several publications, is now reduced to the synonymy of *C. japonicum* (Thunb.) Sweet, which see.

CLERODENDRUM LIGUSTRINUM (Jacq.) R. Br. in Ait., Hort. Kew., ed. 2, 4: 64. 1812.

Synonymy: *Volkameria inermis* P. Ait., Hort. Kew., ed. 1, 2: 364. 1789. *Volkameria ligustrina* Jacq., Coll. Bot. Suppl. 118-119, pl. 5, fig. 1. 1796. *Volkameria foliis oblongo-lanceolatis, integerimis; petiolis, pedunculis calicibusque hirsutis* Willd. ex Poir. in Lam., Encycl. Méth. Bot. 8: 689. 1808. *Volkameria ligustrina* Willd. apud Pers., Sp. Pl. 3: 363. 1819. *Volkameria longifolia* Gmel. ex Steud., Nom. Bot. Phan., ed. 1, 890 in syn. 1821. *Volkameria ligustrina longifolia* Gmel. ex Steud., Nom. Bot. Phan., ed. 1, 890 in syn. 1821. *Clerodendron ligustrinum* R. Br. apud Spreng. in L., Syst. Veg., ed. 16, 2: 758. 1825. *Clerodendrum ligustrinum* H.K. ex Loud., Encycl. Pl. 522. 1829. *Clerodendron ligustrinum* Dryand. ex Drapiez, Herb. Amat. Fl. 5: pl. 323. 1831. *Clerodendrum ligustrinum* R. Br. apud Bojer, Hort. Maurit. 255. 1837. *Clerodendron ligustrinum* "[R. Br. in] Ait." apud Jacks. in Hook. f. & Jacks., Ind. Kew., imp. 1, 1: 561. 1893. *Clerodendron culinare* Sessé & Moc., Fl. Mex., ed. 2, 151. 1894. *Clerodendron fortunatum* Sessé & Moc., Fl. Mex., ed. 2, 151. 1894 [not *C. fortunatum* Blanco, 1837, nor Blume, 1844, nor Buch.-Ham., 1831, nor Burm., 1962, nor Wall., 1885, nor *Clerodendrum fortunatum* L., 1756]. *Clerodendron inermis* Sessé & Moc., Fl. Mex., ed. 2, 152. 1894 [not *Clerodendrum inerme* (L.) Gaertn., 1788].

Volkameria ligustrina (R. Br.) Jacq. ex Millsp., Field Columb. Mus. Publ. Bot. 1: 316. 1896. *Clerodendron mexicanum* T. S. Brandeg., Univ. Calif. Publ. Bot. 3: 39. 1909. *Clerodendron aculeatum* "(non L.) Millsp." ex Standl., Field Mus. Publ. Bot. 3: 400 in syn. 1930 [not *Clerodendrum aculeatum* (L.) Schlecht., 1831]. *Volkameria ligustrina* Jacq. ex Mold., Prelim. Alph. List Inv. Names 53 in syn. 1940. *Clerodendrum ligustrinum* (Jacq.) R. & S. ex Mold., Prelim. Alph. List Inv. Names 23 in syn. 1940. *Clerodendron ligustrinum* (Jacq.) Roem. & Schult. ex Mold., Prelim. Alph. List Inv. Names 20 in syn. 1940. *Clerodendrum ligustrinum* L. ex Mold., Fifth Summ. 1: 463 in syn. 1971. *Volkameria ligustrina* var. *longifolia* Gmel. ex Mold., Phytol. Mem. 2: 462 in syn. 1980. *Clerodendron lingustrinum* (Jacq.) Roem. & Schult., in herb.

Bibliography: Ait., Hort. Kew., ed. 1, 2: 364. 1789; Jacq., Collect. Bot. Suppl. 118-119, pl. 5, fig. 1. 1796; Willd. in L., Sp. Pl., ed. 4 [5], 3 (1): 383. 1800; Poir. in Lam., Encycl. Méth. Bot. 8: 689. 1808; Willd., Enum. Pl. Hort. Berol. 2: 658. 1809; R. Br. in Ait., Hort. Kew., ed. 2, 4: 64. 1812; A. P. DC., Cat. Pl. Hort. Bot. Monsp. 71. 1813; Desf., Tabl. Ecol. Bot. Mus. Hist. Nat., ed. 2, 64. 1815; Pers., Sp. Pl. 3: 363. 1819; Steud. Nom. Bot. Phan., ed. 1, 207 & 890. 1821; Link, Enum. Hort. Berol. 2: 122. 1822; Spreng. in L., Syst. Veg., ed. 16, 2: 758. 1825; Sweet, Hort. Brit., ed. 1, 2: 322. 1827; Loud., Encycl. Pl. 522. 1829; Loud., Hort. Brit., ed. 1, 247. 1830; Sweet, Hort. Brit., ed. 2, 415. 1830; Drapiez, Herb. Amat. Fl. 5: pl. 323. 1831; Loud., Hort. Brit., ed. 2, 247. 1832; Bojer, Hort. Maurit. 255. 1837; G. Don in Loud., Hort. Brit., ed. 3, 247. 1839; G. Don in Sweet, Hort. Brit., ed. 3, 549. 1839; Steud., Nom. Bot. Phan., ed. 2, 1: 383. 1840; D. Dietr., Syn. Pl. 3: 615. 1842; Voigt, Hort. Suburb. Calcut. 473. 1845; Walp., Repert. Bot. Syst. 4: 101 & 111. 1845; Schau. in A. DC., Prodr. 11: 657 & 660. 1847; Buek, Gen. Spec. Syn. Candoll. 3: 106 & 503. 1858; Benth. in Benth. & Hook. f., Gen. Pl. 2 (2): 1156. 1876; J. E. Gonzalez, Revist. Cientif. Mex. 1 (14): 17. 1881; Hensl., Biol. Cent.-Amer. 2: 540. 1882; Jacks. in Hook. f. & Jacks., Ind. Kew., imp. 1, 1: 561. 1893; Sessé & Moc., Fl. Mex., ed. 2, 151--152. 1894; Briq. in Engl. & Prantl, Nat. Pflanzenfam., ed. 1, 4 (3a): 175. 1895; Jacks. in Hook. f. & Jacks., Ind. Kew., imp. 1, 2: 1219. 1895; Millsp., Field Columb. Mus. Publ. Bot. 1: 316. 1896; Höck, Justs Bot. Jahresber. 23 (2): 76. 1897; Koehne, Justs Bot. Jahresber. 23 (2): 628. 1897; Millsp., Field Columb. Mus. Publ. Bot. 1: 386. 1898; J. Ramírez, Veg. Méx. 110. 1899; T. S. Brandeg., Univ. Calif. Publ. Bot. 3: 391. 1909; Loes., Verhandl. Bot. Ver. Brandenb. 53: 81. 1912; Prain, Ind. Kew. Suppl. 4, imp. 1, 50. 1913; P. C. Standl., Contrib. U. S. Nat. Herb. 23: 1252. 1924; P. C. Standl., Field Mus. Publ. Bot. 3: 400. 1930; Staf., Ind. Lond. 2: 239. 1930; Roys, Tulane Univ. Mid. Amer. Res. Ser. Publ. 2: [Ethno-Bot. Maya] 248 & 319. 1931; Mold., Brittonia 1: 472. 1934; Lundell, Carnegie Inst. Wash. Publ. 478: 25, 26, 75, 138, 183, & 203. 1937; Mold., Alph. List Comm. Vern. Names 16, 22, & 28. 1939; Mold., Geogr. Distrib. Avicenn. 14--17 & 37. 1939; Mold., Carnegie Inst. Wash. Publ. 522: 211--213. 1940; Mold., Prelim. Alph. List Inv. Names 19--21, 23, & 53. 1940; Mold., Suppl.

List Inv. Names 10 & 11. 1941; Lundell, Contrib. Univ. Mich. Herb. 8: 61. 1942; Mold., Alph. List Inv. Names 3, 16--19, 21, & 56. 1942; Mold., Known Geogr. Distrib. Verbenac., ed. 1, 16, 19, 20, 22, 23, 72, & 90. 1942; Mold., Phytologia 2: 100. 1945; Jacks. in Hook. f. & Jacks., Ind. Kew., imp. 2, 1: 561 (1946) and imp. 2, 2: 1219. 1946; Mold., Alph. List Cit. 1: 5, 38, 100, 193, 198, 201, 218, 227--229, 231, 232, 240, 251--253, 290, 299, 300, 306, 310, & 315 (1946), 2: 327, 328, 330, 333, 334, 336, 337, 339, 340, 343, 345, 349, 350, 357, 417--419, 423, 425, 426, 428, 429, 459, 475, 499, 500, 502, 578. 587, & 603 (1948), 3: 656, 659, 664, 666, 676, 677, 694, 714, 768, 785, 786, 795, 834, 835, 906, 907, 918, 919, 925, & 964 (1949), and 4: 999, 1019, 1023, 1026, 1028, 1031, 1038, 1051, 1053--1055, 1070, 1099, 1131, 1235, 1239, 1242, & 1297. 1949; Mold., Known Geogr. Distrib. Verbenac., ed. 2, 29, 35, 36, 38, 40, 159, & 182. 1949; Matuda, Amer. Midl. Nat. 44: 576. 1950; Praim, Ind. Kew. Suppl. 4, imp. 2, 50. 1958; Mold., Résumé 35, 41, 43, 45, 48, 216, 230, 259, 262, 263, 266, 273, 391, 392, & 451. 1959; Jacks. in Hook. f. & Jacks., Ind. Kew., imp. 3, 1: 561 (1960) and imp. 3, 2: 1219. 1960; Mold., Résumé Suppl. 13: 6. 1966; Thom, Journ. Ecol. 55: 315 & 320. 1967; Mold., Résumé Suppl. 16: 4 (1968) and 17: 2. 1968; Gibson, Fieldiana Bot. 24 (9): 193 & 194, fig. 36. 1970; Mold., Fifth Summ. 1: 69, 79, 81, 90, 359, 439, 443, 445, 449, 450, & 463 (1971) and 2: 732, 733, & 868. 1971; Mold. in Woodson, Schery, & al., Ann. Mo. Bot. Gard. 60: 138 & 143--145. 1973; Mold., Phytologia 28: 449. 1974; Molina R., Ceiba 19: 96. 1975; Mold., Phytologia 34: 280 (1976) and 36: 30 & 48. 1977; Mold., Phytol. Mem. 2: 61, 71, 74, 78, 83, 349, 392, 461, 462, & 539. 1980; F. C. Seymour, Phytol. Mem. 1: 242. 1980; H. N. & A. L. Mold. in Dassan. & Fosb., Rev. Handb. Fl. Ceyl. 4: 431. 1983; Raj, Rev. Palaeobot. Palyn. 39: 358 & 374. 1983; P. Holmgren & al., Ind. Vasc. Pl. Type Microf. 441. 1985; Mold., Phytologia 57: 400 & 404 (1985), 59: 469 (1986), 60: 182, 282, 361, & 495 (1986), and 61: 101. 1986.

Illustrations: Jacq., Collect. Suppl. 118, pl. 5, fig. 1. 1796; Drapiez, Herb. Amat. Fl. 5: pl. 323 (in color). 1831; Gibson, Fieldiana Bot. 24 (9): 194, fig. 36. 1970.

A regular, weak shrub, 0.5--3 m. tall, or small, low, erect, shrubby tree, 4--5 m. tall, sometimes clambering or vine-like, widely branched; branchlets long, slender, very obtusely tetragonal or subterete, the young ones brownish, the older ones light-gray, conspicuously lenticellate, the youngest minutely puberulent, the older very minutely strigillose or glabrous, sometimes very obscurely spinulose; leaves decussate-opposite, very variable in size and shape; petioles very slender, 5--9 mm. long, minutely puberulent, sometimes articulate and obscurely spinescent at the base; leaf-blades chartaceous or membranous, elliptic or elliptic-oblong to elliptic-lanceolate or lanceolate, 1.5--10 cm. long, 0.6--5.1 cm. wide, apically acute or occasionally subacute, marginally entire, basally acute or subacute, glabrous on both surfaces or under a hand lens obscurely puberulent on the midrib and larger venation, densely punctate beneath; inflorescence supra-axillary or rarely terminal, cymose, the cymes solitary, opposite, 3--7.5 cm. long, 2--7 cm. wide, laxly few-flowered, usually only 3- or 4-flow-

ered, often twice dichotomous and then 7-flowered, the terminal ones (when present) similar but usually smaller; peduncles widely divaricate, very slender, 1.5-4 cm. long, shorter than the subtending leaf, minutely puberulent or subglabrate; bracts few, foliaceous, stipitate, 1-1.5 cm. long, 3-6 mm. wide, caducous, minutely puberulent or glabrate, punctate beneath; bractlets and prophylla linear, 1-6 mm. long, puberulent; pedicels elongate, very slender, 3-6 mm. long, puberulent, in fruit to 13 mm. long; calyx campanulate, 6-8 mm. long, deeply 5-fid, externally villosulous, the lobes lanceolate or deltoid, apically acute or acuminate, marginally ciliate; corolla hypocrateriform, white or very pale-yellow, the tube narrow-cylindric, straight, 1-1.2 cm. long, slightly ampliate at the mouth, the limb spreading, 5-lobed, the lobes subequal, shorter than the tube; stamens long-exserted, involute in bud; filaments white; anthers brown or purple; style equaling the stamens; stigma bifid; ovary 4-sulcate; fruit drupaceous, green, drying brown when mature, 1-1.2 cm. long and wide when mature, externally smooth, splitting into two 2-seeded pyrenes at maturity.

Jacquin (1796) originally described this species, in error, from Mauritius, but on the basis of material cultivated in his greenhouse in Vienna, Austria. He comments that it "Differt a *Volkameria inermis*, villositate petiolorum pedunculorum & calycis, brevitate tubi corollae, tum figura foliorum, & filamentorum colore". In case there may be some question as to the true identity of his plant [vis-a-vis *C. heterophyllum* (Vent.) R. Br. native to Mauritius], his original description is reproduced herewith: "Crescit in insula Mauritii. In caldariis nostris floret Julio, fructescit Novembri. Truncus arboreus, carpum crassus, cinereus, teres, erectus, decempedalis, superne in ramos longos & subdivisos patens, a petiolorum articulis superstitibus tuberculatos quidam, at minime spinosos. Folia omnia opposita, nulla terna, lanceolata, utrinque acuta, integrima, ad oras & nervum medium per lentem obiter villosula, caeterum glaberrima, duas tresve uncias longa cum petiolo villosulo & breviter ad basin articulato. Pedunculi axillares, solitarii, teretes, villosuli, graciles, foliis breviores, tres quatuorve flores pedicellatos sustinentes, saepe bis dichotomi & sic septemflori. Bracteolae ad pedicellos minutissimae, villosae. Calycis villosi laciniae semiovatae, acutae, & ciliatae. Corolla cum aliqua flavedine alba, limbo tubo haud multum superante. Filamenta alba. Fructus magnitudine ciceris, fuscescentes, pulpa pauca molli & fatua. Semina bilocularia. Et alia generis." Dietrich (1842) also credits the species to the Mascarene Island ("Ins. Mascar.").

Clerodendrum ligustrinum actually appears to be native from northern Mexico to Panama. Collectors have found it growing in thickets, along roadsides, on the banks of creeks and rivers (even "overhanging the river"), in marshes and swamps, on natural levees, in beach-ridge forests, high forests, and secondary low forests, in cleared forest areas and open grazed areas, in lagoons, on inundated land, on marshy lake shores, in littoral habitats, at the margin of woodland, in high evergreen or subevergreen woods, in sandy bushy areas and among secondary vegetation, in the open sun in rocky-sandy soil,

in "suela calizo pedregosa", "suela negro arcilloso calido", and clay soil, in acahual, corozal, tintal, and flat places in matorral, at altitudes from sealevel to 800 meters, in flower in October and from December to July, and in fruit from March to July and November to January.

Standley (1924) lists the species from Campeche, Oaxaca, Puebla, Tabasco, Tamaulipas, Veracruz, and Yucatán, Mexico; Gonzalez (1881) reports it from Nuevo León, and Sousa, in a personal communication to me, from Quintana Roo. Millspaugh (1896) reported it "common in open lands near Izamal" in Yucatán. Lundell (1937) avers that in El Petén, Guatemala, it grows densely along riverbanks which are not too shaded, is common on swampy banks, and is an occasional shrub "less than 4 m. tall" in marginal forests there.

Ventura describes the species as "very scarce" in Veracruz, but Calzada refers to it there as an "abundant shrub", but "rare" in Tabasco; King found it to be a common shrub in Oaxaca.

Sweet (1827) states that *C. ligustrinum* was introduced into cultivation in England in 1789 from "Mauritius" -- as stated above, Jacquin, in 1796, also thought that it originated in Mauritius. Actually, in Mauritius the related species, *C. inerme* (L.) Gaertn. and *C. heterophyllum* (Vent.) R. Br., are known to grow, but I have yet to see any material of *C. ligustrinum* from that island.

Williams reports *C. ligustrinum* cultivated in Veracruz, Mexico, while Molina (1975) found it in cultivation in Honduras.

The species is apparently very variable as to stature -- it is described as a "tree" on Gentle 394 and West 22/12, as a "clambering shrub" on Lundell 6962 & 17625, as a "woody climber" on Lundell 18026, as a "woody vine" on Contreras 7416, Gentle 2184, and Matuda 3168, as a "vine" on Lundell 1472, and as "a vine climbing up through vegetation" on Sohns 1655. All other collectors and authors describe it merely as a "shrub". Johnson, in original longhand notes preserved in the Columbia University herbarium, states for his no. 12: "Can discern no difference between the flowers of this & the preceding [no. 63], yet this was a long slender stem, supporting itself by other trees, something between climbing and standing erect."

The corollas are described as "white" by all collectors who mention corolla-color at all (on no less than 24 of the collections cited below) and by authors such as Loesener (1912) and Standley (1930).

Common and vernacular names reported for the species are the following: "itzimte", "itzimté", "itzinté", "iuimte", "mosté", "musté", "palo blanco cimarron", "privet-leaved clerodendrum", "snake-tree", "volcameria", "volkameria à f. de troéne", "y'imte", and "yɔimte".

Poiret (1808) says: "Cette plante ressemble beaucoup au *Volkameria inermis*; elle en diffère par ses feuilles oblongues-lancéolées, plus étroites, point ovales, glabres à leurs deux faces, vertes en dessus, plus pâle en dessous, très-entières à leurs bords, aiguës à leur sommet, rétrécies à leur base, & soutenues par des pétioles velus. Les fleurs ont la même disposition, mais leur pédoncule, ainsi que leur calice, est hérissé de poils. La corolle est plus

cotré: son tube est à peu trois fois plus long que le calice, de mnitie moins long que celui du *Volkameria inermis*. Les filaments sont blancs & non de couleur purpurine; les anthères brunes & non violettes."

Bentham (1876) places *C. ligustrinum* in the group of *Volkameria*, where it certainly belongs if habit means anything. He says: "Volkameria, Linn., inclusit species plures charactere vago a Clerodendro separates, ab auctoribus recentioribus ad *V. aculeatam* limitatur, speciem habitu plerisque notis *C. inermi*, *C. ligustrinum* aliisque affinem sed pyrenis per paris cohaerentibus; in *C. inermi* tamen aliisque speciebus pyrenae per paria arcta contiguae sunt, dum in aliis lacunis v. mesocarpio succoso plusminus separatae, et Grisebach in Fl. Brit. W. Ind. 500 aptius *V. aculeatam* cum caeteris Volkameriis Clerodendro adjunxit."

He goes on to include the genus *Torreya* of Sprengel here, too, saying: "Torreya, Spreng. Neue Entd. ii. 121, est ex Arn. in Ann. Nat. Hist. ser. 1, i. 130, Clerodendri species ex India occidentali nec a Brasilia et ex descr. Sprengelii forte a *C. ligustrina*, Br., planta Mexicana non diversa." On the contrary, I have examined the type specimen and it proves to be *C. volubile* P. Beauv., which see.

Bojer (1837) regarded *C. ligustrinum* as a synonym of the native *C. heterophyllum* (Vent.) R. Br. of Mauritius and this is of interest in view of Jacquin's and Sweet's opinion that *C. ligustrinum* came into cultivation from Mauritius. If the two names should prove to be synonymous, then *C. culinare* of Sessé & Mociño would be the proper name for the New World plant. Gonzales (1881) identifies *Volkameria ligustrina* with *V. inermis* L.

Sesse & Mocino (1894) report that the leaves of *Clerodendrum ligustrinum* are used in Mexico by the natives to flavor fish, forming the basis for their use of the epithet "culinare" for the species. This culinary use is verified by Lundell (1937).

Roys (1931) states that this is "A plant with which the Indian women season posole, camote-stew and other things....The Maya text prescribes the boiled leaves as a wash for snake-bites."

As indicated above, *C. ligustrinum* is typified by a specimen cultivated in Vienna. The type of *C. mexicanum* T. S. Brandeg. was collected by C. A. Purpus (no. 3336) at Santa Lucia, in the vicinity of San Luis Tultitlanapa, Puebla, near Oaxaca, Mexico, in January, 1908 and is deposited in the University of California herbarium at Berkeley. It differs slightly from the common form of *C. ligustrinum* in having lighter and brighter leaf-blades when pressed and dried. *Clerodendron fortunatum* Sessé & Moc. seems to be based on Sesse, Mocino, Castillo, & Maldonado 2182 from fields at Tehuacan, Puebla. *Clerodendron culinare* Sesse & Moc. is typified by a drawing on Macbride photos 30831.

The so-called *Volkameria ligustrina* var. *rotundifolia* Gmel. is a synonym of *Clerodendrum inerme* f. *parvifolium* Mold.

LeSueur 548 appears to represent a very narrow- and small-leaved form of *C. ligustrinum*. Similarly, the Fendler specimens from Panama are anomalous in their very small, distinctly acuminate leaf-blades and may possibly represent a distinct form or variety. Small-

leaved specimens of *C. ligustrinum* are, indeed, not uncommon, but not with the leaf-blades so acuminate at the apex.

For the record, the original description of some of the important conspecific synonyms are reproduced here:

(1) *Clerodendron mexicanum* T. S. Brandeg. -- "Frutex, ramis viridibus, novellis pubescentibus: foliis ovato-acuminatis, basi cuneatis, integris supra glabris, subtus dense minute furfuraceis, 8 cm. longis, 4 cm. latis; floribus cymoso-paniculatis ex axillis foliorum superiorum: calyce campanulato, 3 mm. longo, 5-fido, lobis 5 deltoideis: corollae tubo tenuiter cylindraceo recto, ad faucem leviter ampliato, circa 12 mm. longo; limbo patenti 5-fido, lobis subaequalibus: staminibus 4 longo exsertis, in alabastro involutis: stylo staminibus aequanti 2-fido: ovario 4-sulcato. Fructus ignotus. The dried specimens indicate that the petals are white and the anthers purple. No. 3336." [Note the statement that the leaf-blades are densely furfuraceous beneath!]

(2) *Clerodendrum culinare* Sessé & Moc. -- "Clerodendron foliis ovalibus, acutis, integerrimis. F.M. Caulis frutescens, sesquiorgyam longus, obtuse angulatus, glaberrimus. Rami oppositi, cauli similes. Folia opposita, ovalia, acuta, acuminata, integerrima, utrinque glabra, brevissime petiolata. Racemi axillares, solitarii, dichotomi, patentissimi. Pedunculus communis compressus, petiolo duplo longior, partiales filiformes, triflori, unicus uniflorus in dichotomia. Bracteae oppositae, lineares, erectae. Flores candissimae, elegantes. Habitat in mexicanis arenosis litoribus. Floret Novembri. Ȑ. Usus. Folia piscibus condiendis adhibentur non ingrato sapore."

(3) *Clerodendron fortunatum* Sessé & Moc. -- "Clerodendron foliis lanceolatis, integerrimis. Calyx: perianthium monophyllum, campanulatum, ore partito laciniis ovatis, acutis, patentissimis, persistentes. Corolla monopetala, ringens. Tubus longissimus, subincurvatus.....tribus ascendentibus. Stamina tubi inserta, corolla triplo longiora; quorum duo breviora. Antherae simplices. Pistillum. Germen subrotundum; stylus figura, situ et longitudine staminum; stigma bifidum laciniis acutis. Pericarpium.....Semina.....Caulis fruticosus, obtuse angulatus, scaber, sesquiulnam longus. Rami terni, patentes, glaberrimi. Folia opposita, lanceolata, integerrima, utrinque glabra, breviter petiolata. Pedunculi ex summis foliorum axillis, subsexflori, erecti, foliis paulo breviores. Bracteae subulatae, ad basim pedicellorum. Flores albi, elegantes, insipidi, inodori. Habitat in Tehuacani agris. Floret Junio. Ȑ."

(4) *Clerodendron inermis* Sessé & Moc. -- "Volkameria ramis inermibus. Calyx: perianthium monophyllum, campanulatum, semiquinquefidum laciniis acutis, aequalibus. Corolla monopetala, inaequalia. Tubus tenuis, longus. Limbus 5-fidus, laciniis oblongis, superioribus paulo brevioribus, profundioribus. Stamina. Filamenta quatuor, filiformia, longissima, ascendentia. Antherae oblongae, incumbentes. Pistillum. Germen quadrangulare; stylus filiformis, ascendens, parum staminibus brevior; stigma bifidum, acutum. Pericarpium. Bacca subrotunda, bilocularis, quadrisulcata. Semina bina, oblonga. Radix fibrosa, perennis, horizontalis. Caules numerosi, sesquidrantales, ramosissimi. Rami oppositi, teretes, glabri. Folia op-

posita, ovata, serrata, glabra. Petioli brevissimi. Pedunculi axillares, inferiores uniflori, superiores triflori, longitudinem foliorum. Bracteae setaceae. Corollae albae, nonnil subroseae, jasminum redolentes, Clerodendro fortunato similes. Baccae magnitudine Pisi, tetraspermae. Habitat in aridis Tehuacani. Floret Junio. D." [Note the statement that the leaf-blades are serrate and that the plant is an annual].

For *Clerodendrum ligustrinum* Millspaugh (1898) cites Gaume: 736 & 875 and Schott 27 from Yucatán; Loesener (1912) cites Seler 1896 from Chiapas; Lundell (1942) cites Matuda 3168 & 3169 from Tabasco; and Matuda (1950) cites Matuda 17323.

Material of *C. ligustrinum* has been misidentified and distributed in some herbaria as *C. aculeatum* (L.) Griseb., *C. aculeatum* (L.) Schlecht., *Volkameria aculeata* L., *V. inermis* L., *Aegiphila paludosa* T. S. Brandeg., and *Rubiaceae*. On the other hand, the Breedlove & Thorne 20913 and Wedel 67, 1955, & 2732, distributed as typical *C. ligustrinum*, actually are its var. *nicaraguense* Mold., Alexander 248 is var. *paludosum* (T. S. Brandeg.) Mold., and Flecker s.n. and Herb. Hort. Bot. Imp. Pet. Mag. s.n. are *C. heterophyllum* (Vent.) R. Br.

It should be mentioned that the labels accompanying E. P. Johnson 12 & 63 are inscribed "Yucatán and Tabasco", but the plants were apparently collected on the banks of the Rio Palizado in Campeche; Karwinski 704, cited below as from Querétaro, may actually have been collected in Hidalgo -- the label is inscribed "entre Cazadero & Meta de St. Juan".

Citations: MEXICO: Campeche: Goldman 446 (W--396809); E. P. Johnson 12 (C, K), 63 (C, K); Marroquín 140 (Ip); Steere 1912 (F--668821, Mi). Chiapas: Linden s.n. [Chiapas, Mars 1840] (Cb, P); Seler & Seler 1896 (B); Sohns 1655 (Ba--388915. Ca--43979, Mi, N). Oaxaca: E. J. Alexander 248 (Ld, N); Galeotti s.n. [Oaxaca] (V, V); R. M. King 1982 (Au--186273, Mi); Ll. Williams 8470 (Mi). Puebla: Purpus 3336 (B, Bm, Ca--125372, E--118867, Ed, F--244046, G, Ld--photo, N, N--photo, P, W--840976); Sessé, Mocino, Castillo, & Maldonado 2182 (F--847137, Ld--photo, N--photo, Q, Q), s.n. [Macbride photos 30831] (F--929248, Ld--photo, N--photo, Ur--photo). Querétaro: Karwinski 704 (L, L, N), 704b (L). Quintana Roo: Davidse, Sousa, Chater, & Cabrera 20223 (E--2941995). Tabasco: Barlow 18/3 (Ws), 36/1 (Mi, Ws); Calzada 2338 (N); Matuda 3168 (F--1026897, Mh, Mi, N), 3169 (F--1026889, Mh, Mi, N); Rovirosa 119 (D, K, W--40172, W--1323371); Seler & Seler 5439 [359] (B, B); R. C. West 3/11 (Ws), 22/12 (Ws). Tamaulipas: Berlandier 181 (B, B, B, Bm, Cb, Cb, Cb, Dc, E--118690, L, P, P, P, S, V, V, V, X); Edw. Palmer 186 (Bm, E--778771, F--436228, G, Gg--32042, K, N, W--463122). Veracruz: Beaman 5645 (Ld); Calzada 647 (W--2790275, W--2790983); Dorantes López 56 (Ac); Faberge s.n. [Laguna Encantada, 8 Jan. 1971] (Au--291890); Finck 1 (K); Hahn 147 (P, P), s.n. [9 Avril 1866] (P), s.n. [Tlacatalpan] (G, K, L); LeSueur 548 (Au, F--1003675, Tu--98524); Liebmann 11196 (Cp, W--1315038), 11197 (Cp, W--1269905), 11198 (Cp, W--1315039); Marquez & Dorantes 27 (N); E. W. Nelson 489 (W--569127); Edw. Palmer 407 (Bm, Cb, E--777733, G, Gg--32036, K, N, W--463363), 450 (E--778663, F--436406, Gg--34498, K, N, W--568029); Purpus 8605 (Ca--

206741, E--913517, G, N, W--1206795); Seler & Seler 672 (B); Ventura A. 3386 (Au--304005, Mi); Ll. Williams 8470 (F--896574, N). YUCATÁN: G. F. Gaumer 736 (B, Bm, G, I, Lu, N, S, Us, W--268427), 875 (E--118963, F--36678. G, N, S, W--268624, X), 1933 (B, Ca--385156, Cp, E--954102, F--58731, G, S), s.n. [Izamal 1888] (F--181588, G, K), s.n. [1913] (Me); Gaumer & sons 736 (A, Br, Br, Ca--446252, Cp, Du--207700, E--118964, F--36539, Gg--160800, K, L, Mi, V), 1933 (Po--174966); Schott 27 (F--40025), 807 (Bm). State undetermined: Herb. Harvey s.n. (Du--166591); Herb. Pavon s.n. (X); Miller s.n. [1853] (M); Quarles v. Ufford 505 (Ut). GUATEMALA: El Petén: Aguilar Hidalgo 353 (F--759462, I, Mi), 433 (E--1097747, F--790934, Mi, N, N); Contreras 7416 (Au--278875, Ld, Ld), 8303 (Ld, Ld, W--2795351); C. L. Lundell 1472 (Du--248371, F--662827, Mi, W--1588968), 176.5' (Au--278481, Ld, Ld, W--2795344), 17775 (Au--278578, Ld, Ld), 18026 (Au--278474, Ld, Ld, W--2795343), 18083 (Au--278482, Ld, Ld), 18238 (Au--278473, Ld, Ld); Steyermark 45943 (Mi, N), 46034 (Ld). BELIZE: Dwyer 10351 (Au), 11039a (W--2787872); Gentle 394 (E--1091152, F--659132, Gg--235235, Mi, W--1587461), 1476 (E--1083642, E--759525, I, Mi, N), 2184 (Mi); A. Gentry 7591 (Ld, W--2787755, Ws); Liesner & Dwyer 1649 (Au, W--2800456); C. L. Lundell 4319 (F--699485, G, Mi), 4344 (F--692303, G, I, Mi, Mi, S), 6962 (Au, F--894480, Mi, Mi, N); Puleston 771? (E--3020133). PANAMA: Colón: Fendler 300 (K). Province undetermined: Herb. Mell s.n. (Bm). CULTIVATED: Honduras: Molina R. 21922 (N). LOCALITY OF COLLECTION UNDETERMINED: Herb. Desvaux s.n. (P); Parkinson s.n. (Ed). MOUNTED ILLUSTRATIONS: Gibson, Fieldiana Bot. 24 (9): 194, fig. 36. 1930 (Ld); Jacq., Collect. Suppl. pl. 5, fig. 1. 1796 (Ld).

CLERODENDRUM LIGUSTRINUM var. *NICARAGUENSE* Mold., Alph. List Comm.

Names 16 & 28 nom. nud. 1939; Phytologia 1: 416. 1940.

Bibliography: Mold., Alph. List Comm. Names 16 & 28. 1939; Mold., Geogr. Distrib. Avicenn. 16 & 32. 1939; Mold., Phytologia 1: 416. 1940; Mold., Known Geogr. Distrib. Verbenac., ed. 1, 22, 23, 72, & 90. 1942; Mold., Phytologia 2: 100. 1945; Mold., Alph. List Cit. 1: 100, 193, & 319 (1946), 2: 340 (1948), 3: 666 (1949), and 4: 999, 1053, & 1099. 1949; Mold., Known Geogr. Distrib. Verbenac., ed. 2, 38, 40, 159, & 182. 1949; Mold., Résumé 45, 48, 216, & 451. 1959; Mold., Résumé Suppl. 16: 4 (1968) and 17: 2. 1968; Mold., Fifth Summ. 1: 85, 90, & 359 (1971) and 2: 868. 1971; Mold. in Woodson, Schery, & al., Ann. Mo. Bot. Gard. 60: 138 & 143--145. 1973; Mold., Phytologia 36: 30. 1977; Mold., Phytol. Mem. 2: 61, 78, 83, 349, & 539. 1980; F. C. Seymour, Phytol. Mem. 1: 242. 1980.

This variety differs from the typical form of the species in its leaves and axillary cymes usually being ternate and the leaf-blades being regularly puberulent or pubescent beneath.

The variety is based on Chaves 227 from Managua, Nicaragua, collected on July 26. 1926, and deposited in the United States National Herbarium in Washington.

Collectors describe this plant as a shrub, 2 m. tall, or small tree, 5 m. tall. Englesing describes his collection as "probably an

escape from cultivation.....growing among low second growth in full sunlight in old clearings....the diameter of the stems near their base 1 to 2 cm.....stems many from the same base, erect, arcuate outward, cylindrical, the branches minutely furrowed vertically, gray-white, sparsely branched, the branches generally opposite, arcuately curved downward or stiff and straight, cylindric, light gray-green in color, with many minute raised lenticels, the leaves opposite in whorls, seemingly 4-ranked, smooth, dull dark-green above, lighter green beneath, the flowers white, on axial cymes near the apices of the branches, the fruit 4-celled, green, oblate-spherical. [Grows in] Society [with] mostly herbs and grasses."

Collectors have encountered the plant in dense wet forests, on extensive sand-dunes, and around roadside ponds, from sealevel to 1100 m. altitude, in anthesis from December to March and July to October, and in fruit in December. Standley reports it "rare" in Chinandega. The corollas are described as "white" on all the Breedlove & Thorne, Standley, and Wedel collections cited below, but on Lewis & al. 998 the "flowers" are said to have been "brown" and the fruit "yellow-brown" -- there are no corollas or fruit on the specimen examined, but there are brown fruiting-calyxes.

Vernacular names recorded for this plant are "jasmin", "si me miras", and "si me miras te enamoras".

The Lindsey collection, cited below, is anomalous in having opposite leaves, many of which have a pair of coarse teeth 2/3 the distance to the apex from the base.

Material of this taxon has mostly been identified and distributed in herbaria as typical *C. ligustrinum* (Jacq.) R. Br.

Citations: MEXICO: Chiapas: Breedlove & Thorne 20913 (Ld, Mi). NICARAGUA: Chinandega: P. C. Standley 11488 (N); E. Wall s.n. [Corinto, 15/4/28] (Ew, Ew). Managua: Chaves 227 (Ld--photo of type, N--photo of type, S--photo of type, W--1266749--type). Zelaya: Englesing 120 (F--572529, N, N, Y). Corn Island: F. C. Seymour 4411 (Ld). PANAMA: Bocas del Toro: Lewis, Dwyer, Elias, & Robertson 998 (N). Canal Zone: W. R. Lindsay 395 (Ba, F--855590). Colon Island: Wedel 67 (E--1218008). Old Bank Island: Wedel 1955 (E--1232155). Shepherd Island: Wedel 2732 (E--1244912). CULTIVATED: Costa Rica: Tonduz 129 (B, Ld--photo, N--photo, S--photo). Honduras: P. C. Standley 24599 (N).

CLERODENDRUM LIGISTRINUM var. *PALUDOSUM* (T. S. Brandeg.) Mold., Geogr. Distrib. Avicenn. 14 nom. nud. 1939; comb. nov.

Synonymy: *Aegiphila paludosa* T. S. Brandeg., Univ. Calif. Publ. Bot. 6: 191. 1915.

Bibliography: T. S. Brandeg., Univ. Calif. Publ. Bot. 6: 191. 1915; Prain, Ind. Kew. Suppl. 5, imp. 1, 6. 1921; Fedde & Schust., Justs Bot. Jahresber. 44: 253. 1922; Mold., Geogr. Distrib. Avicenn. 14. 1939; Mold., Prelim. Alph. List Inv. Names 3. 1940; Mold., Suppl. List Comm. Vern. Names 11. 1941; Mold., Alph. List Inv. Names 3. 1942; Mold., Known Geogr. Distrib. Verbenac., ed. 1, 16 & 90. 1942; Mold., Alph. List Cit. 1: 315 & 319 (1946) and 2: 423, 500, & 578. 1948; Mold., Known Geogr. Distrib. Verbenac., ed. 2, 29 & 182. 1949;

Mold., Résumé 35, 230, & 451. 1959; Prain, Ind. Kew. Suppl. 5, imp. 2, 6. 1960; Mold., Fifth Summ. 1: 69 & 382 (1971) and 2: 868. 1971; Mold., Phytol. Mem. 2: 61 & 539. 1980.

This variety differs from the typical form of the species in its much shorter calyx-lobes.

The variety is based on *Purpus 7181* from around ponds near San Geronimo, Oaxaca, Mexico, collected in July, 1914, and deposited in the herbarium of the University of California at Berkeley.

The leaves of this plant often have very much abbreviated leaf-bearing twigs in their axils so that they appear, on first glance, to be fascicled. Collectors describe it as a shrub, 0.5--3 m. tall, or a tree, to 5 m. tall, the stems to 3 cm. in diameter, the bark deeply and coarsely furrowed, the lenticels very abundant, elongate, white, conspicuous (more so than in the typical form), the corollas white, filaments white, and anthers brown.

They have found it growing in open sunshine in clay-loam soil, on flat grazed areas, and among vegetation composed mostly of leguminous shrubs and cacti, at altitudes of less than 50 m., in flower in January and July, and in fruit in January.

Material has been identified and distributed in some herbaria as typical *C. ligustrinum* (Jacq.) R. Br.

Citations: MEXICO: Oaxaca: E. J. Alexander 248 (Ld); R. M. King 873 (Au--214228, Ld, Mi, W--2301526), 1982 (N); *Purpus 7181* (B--isotype, Bm--isotype, Ca--175009--type, E--765041--isotype, F--424587--isotype, F--photo of type, G--isotype, Ld--photo of type, N--isotype, N--photo of type).

CLERODENDRUM LINDENIANUM A. Rich. in Sagra, Hist. Cub. Bot. 2: 147 [as "Clerodendron"]. 1850; Mold., Alph. List Comm. Vern. Names 26 & 31. 1939.

Synonymy: *Clerodendron lindenianum* A. Rich. in Sagra, Hist. Cub. Bot. 2: 147. 1850. *Clerodendron lindenianum* Schau. ex Mold., Prelim. Alph. List Inv. Names 20 in syn. 1940. *Clerodendron lindelianum* Rich. ex Mold., Prelim. Alph. List Inv. Names 20 in syn. 1940. *Clerodendron lindeniana* A. Rich. ex Roig, Dicc. Bot. 2: 1005 sphalm. 1953. *Clerodendrum lindenianum* var. *lindenianum* [Alain] in Leon & Alain, Fl. Cuba, imp. 1, 4: 322. 1957.

Bibliography: A. Rich. in Sagra, Hist. Fis. Polit. Nat. Cuba 11 (2) [Fl. Cub. Fanerog. 2]: 147. 1850; C. Muell. in Walp., Ann. Bot. Syst. 5: 710. 1860; Sagra, Icon. Pl. Fl. Cub. 41. 1863; Griseb., Cat. Pl. Cub. 216. 1866; Jacks. in Hook. f. & Jacks., Ind. Kew., imp. 1, 1: 561. 1893; Mold., Alph. List Comm. Vern. Names 26 & 31. 1939; Mold., Geogr. Distrib. Avicenn. 5. 1939; Mold., Prelim. Alph. List Inv. Names 20 & 22. 1940; Mold., Alph. List Inv. Names 21. 1942; Mold., Known Geogr. Distrib. Verbenac., ed. 1, 25 & 90. 1942; Mold., Phytologia 2: 100. 1945; Jacks. in Hook. f. & Jacks., Ind. Kew., imp. 2, 1: 561. 1946; Mold., Alph. List Cit. 1: 3, 63, 75, 185, 187, 302, & 312. 1946; H. N. & A. L. Mold., Pl. Life 2: 69. 1948; Mold., Alph. List Cit. 2: 415, 418, 569, 578, 579, & 648--651 (1948), 3: 664, 675, 757, 826, 867, 889, 928, & 929 (1949), and 4: 1026, 1035, 1068, 1144, & 1206. 1949; Mold., Known Geogr. Distrib.

Verbenac., ed.2, 43 & 182. 1949; Roig, Dicc. Bot. 2: 898 & 1005. 1953; Alain in León & Alain. Fl. Cuba, imp. 1, 4: 319 & 322. 1957; Mold., Résumé 51, 216, 266, 271, 273, & 451. 1959; Jacks. in Hook. f. & Jacks., Ind. Kew., imp. 2, 1: 561. 1960; Mold., Fifth Summ. 1: 95, 359, 449, 461, & 463 (1971) and 2: 868. 1971; Alain in León & Alain, Fl. Cuba, imp. 2, 2: 319 & 322. 1974; Mold., Phytol. Mem. 2: 88, 350, & 539. 1980; Mold., Phytologia 57: 478 (1985) and 60: 130 & 131. 1986.

Illustrations: Sagra, Icon. Pl. Fl. Cub. 41. 1863.

A shrub or small tree, 1--7 m. tall, usually only a shrub 1--4 feet tall; branches and branchlets stoutish, very light-gray or whitish, obscurely tetragonal or subterete, tuberculate, glabrate; twigs more slender, yellow-brown or buff, more or less densely pubescent with brownish often hirsutulous hairs; nodes not annulate, usually much thickened because of the very heavy, corky, prominent leaf-scars; principal internodes 0.3--3 cm. long, often extremely abbreviated on branchlets and twigs; leaves decussate-opposite; petioles stout, 3--9 mm. long, densely short-pubescent with brownish hairs; leaf-blades tremendously variable in size, shape, and texture, coriaceous, gray-green on both surfaces or brighter green beneath, varying from oblong, elliptic, or oblong-elliptic to oblong-lanceolate, oblanceolate, or obovate, 4--20.5 cm. long, 1.5--8 cm. wide, apically usually obtuse or rounded, varying to sharply acute or short-acuminate, marginally entire (and often more or less revolute in drying) or denticulate to subdenticulate-spinose, basally acute or cuneate (varying to deeply cordate), glabrous above (except for the pilose midrib), sparsely and often obscurely strigillose-puberulent (or subglabrate on the lamina) beneath, especially along the larger venation; midrib slender or stoutish, sharply prominent within a furrow above, very prominent beneath, pilose above; secondaries slender, 5--7 per side, arcuate-ascending, flat or slightly impressed above, very prominent beneath, often arcuately joined close to the margins beneath; vein and veinlet reticulation rather abundant, the larger portions decidedly prominent beneath, mostly obscure above; inflorescence axillary, often only in the uppermost leaf-axils, the cymes opposite, solitary, 4--10 cm. long, 2--5 cm. wide, 2--5-flowered (mostly 3-flowered); peduncles slender, 0.1--5 cm. long, usually elongate, sparsely and obscurely strigillose or glabrate, yellow-brown or buff; pedicels similar to the peduncles in color and texture, 6--35 mm. long, very divaricate, usually jointed and bracteolate near the middle (from which joint another flower may arise); bracts absent; bractlets and prophylla linear or setaceous, minute; flowers fragrant; calyx obconic, 3--4 mm. long, apically ampiate, the rim truncate and undulate, externally hirtellous; corolla hypocrateriform, white, 2--2.5 cm. long, the lobes oblong, 5 mm. long; fruit drupaceous, fleshy, light-blue.

This endemic Cuban species is based on J. Linden 1775 from the mountains near Pinal de los Hondones, Oriente, Cuba, collected in May, 1844. The type collection represents a form with thinner and less coriaceous, almost flat-margined, leaf-blades, well represented also by Jack 5628 in the Arnold Arboretum herbarium and by Pollard,

Palmer, & Palmer 216.

Leaf-blades with denticulate margins are seen on Britton, Britton, & Shafer 277, Roig 1642, Shafer 4175, 7743, & 8307, and C. Wright 3177; Jack 5628 in the Britton Herbarium exhibits leaf-blades very distinctly and sharply dentate with irregular teeth.

Collectors have encountered this plant in pine woods, grassy pineland, and pineland thickets, among limestone rocks, and on coral rock hills, at 600 m. altitude, in flower from January to March, as well as in May and September, and in fruit in February, May, and July.

A key to help distinguish *C. lindenianum* from other Cuban taxa in this genus will be found under *C. grandiflorum* (Hook.) Schau. in the present series of notes [60: 130--131].

Vernacular names reported for *C. lindenianum* are "roble guayo" and "turquesa".

It should be noted that the León 18548 collection, cited below, seems to be very close to *C. anafense* Britton & P. Wils., at least in general habit.

Material of *C. lindenianum* has been misidentified and distributed in some herbaria as *C. cubense* Schau., *C. tuberculatum* A. Rich., and *Aegiphila* sp. On the other hand, the Alain 6875, distributed as *C. lindenianum*, actually is *C. grandiflorum* (Hook.) Schau.

Citations: CUBA: Havana: Britton, Britton, & Shafer 777 (Cm, N); León 13654 (D-694850, Y-13607). Las Villas: J. G. Jack 5628 (A, Bm, N, N, P), 5707 (A, N, W-1555504), s.n. [León 18548] (Ha), s.n. [Soledad, Oct. 7, 1927] (Du-348517); Luna 985 (Ha, N). Oriente: Alain 3157 (Hk); Mrs. G. C. Bucher 2 (N); Clemente 4529 (Ha, N); Clemente, Alain, & Chrysogone 6992 (Ha); Curbelo s.n. [Herb. Roig 6220] (N); Ekman 3991 (B, S), 4018 (B, N, S), 4219 (B, N, S), 6736 (B, S); R. A. Howard 6041 (G); León & Alain 19159 (Ha); León & Clemente 20380 (Ha); León & Victorin 19814 (Ha); Linden 1775 (B--isotype, Bm--isotype, Cb--isotype, K--isotype, K--isotype, Ld--photo of isotype, N--photo of isotype, P--isotype, V--isotype, X--isotype); Lopez F. 1917 (W-2227105); Pollard, Palmer, & Palmer 2161 (E-40801, F-125724, G, N, W-402947); Roig 1642 (Es), 6640 (Es); Shafer 3622 (N), 7743 (N), 8307 (G, K, N, N, W-696507); Van Hermann 11761 (Es, N). Province undetermined: Sagra 219 (K), s.n. (V, V); C. Wright 3177 [1860--1864; Herb. Sauvalle 1781] (B, Bm, Cb, E-118857, G, Hv, K, Os, P, X). CULTIVATED: Florida: H. N. Moldenke 21450 (Ld).

CLERODENDRUM LINDENIANUM var. *CAMAGUEYENSE* (Britton & P. Wils.)

Mold., Geogr. Distrib. Avicenn. 5. nom. nud. 1939; stat. nov.

Synonymy: *Clerodendrum camagueyense* Britton & P. Wils., Mem. Torrey Bot. Club 16: 99. 1920. *Clerodendron camagueyense* Britton & P. Wils. apud A. W. Hill, Ind. Kew. Suppl. 6, imp. 1, 49. 1926. *Clerodendron camagueyensis* Britton & P. Wils. ex Roig, Dicc. Bot. 2: 741 & 1005. 1953.

Bibliography: Britton & P. Wils., Mem. Torrey Bot. Club 16: 99. 1920; A. W. Hill, Ind. Kew. Suppl. 6, imp. 1, 49. 1926; Mold., Geogr. Distrib. Avicenn. 5. 1939; Mold., Prelim. Alph. List Inv. Names 22. 1940; Mold., Alph. List Inv. Names 21. 1942; Mold., Known Geogr.

Distrib. Verbenac., ed. 1, 25 & 90. 1942; Mold., Alph. List Cit. 1: 3, 187, & 312 (1946), 3: 867 & 928 (1949), and 4: 1033. 1949; Mold., Known Geogr. Distrib. Verbenac., ed. 2, 43 & 182. 1949; Roig, Dicc. Bot. 2: 741 & 1005. 1953; Alain in León & Alain, Fl. Cuba, imp. 1, 4: 322. 1957; A. W. Hill, Ind. Kew. Suppl. 6, imp. 2, 49. 1959; Mold., Résumé 51, 271, & 451. 1959; Mold., Fifth Summ. 1: 95 & 461 (1971) and 2: 868. 1971; Alain in León & Alain, Fl. Cuba, imp. 2, 2: 322. 1974; Mold., Phytol. Mem. 2: 88 & 539. 1980; P. Holmgren & al., Ind. Vasc. Pl. Type Microf. 441. 1985; Mold., Phytologia 57: 478. 1985.

This variety differs from the typical form of the species in its longer corolla-tubes, the corolla being to 4 cm. in length.

Britton & Wilson's original (1920) description is: A shrub 1--1.2 m. high, the twigs and petioles tuberculate and minutely hispidulous with mostly appressed hairs. Leaves obovate or elliptic-obovate, 7--11 cm. long, 3.5--6 cm. wide, dark green, lustrous and hispidulous on the veins above, the secondary veins inconspicuous, paler, coarsely reticulate-veined and minutely hispidulous on the veins beneath, the margin denticulate; petioles 1 cm. long; calyx narrowly campanulate, subtruncate at the apex, glabrous; corolla about 4 cm. long, white, the lobes oblanceolate; stamens exserted."

The variety is based on Shafer 496 from savannas south of Sierra Cubitas, Camagüey, Cuba, collected on February 20 and 21, 1909, and deposited in the Britton Herbarium at the New York Botanical Garden. Roig describes the plant as an "Arbusto silvestre de hojas coriáceas, que crece en las sabanas al sur de la ciudad de Camagüey. Tiene las flores blancas de tubo largo y estambres salientes". Its vernacular name is "palo sabanero". It has been collected in anthesis in December and February.

Citations: CUBA: Camagüey: Acuna 13783 (Es); Roig 3428 (N); Shafer 496 (F--284445--isotype, N--type, W--659156--isotype). Oriente: Ekman 15027 (B, N, S). MOUNTED CLIPPINGS: Britton & P. Wils., Mem. Torrey Bot. Club 16: 99. 1920 (W).

CLERODENDRUM LINDIENSE Mold., Phytologia 5: 83. 1954.

Synonymy: *Clerodendrum lindenii* Mold., Phytologia 5: 97 sphalm. 1954.

Bibliography: B. Thomas, Engl. Bot. Jahrb. 68: [Gatt. Clerod.] 89. 1936; Mold., Phytologia 5: 83 & 97. 1954; Anon., Trav. Lab. Bot. Syst. Brux. 16: 66. 1955; Anon., Assoc. Etud. Tax. Fl. Afr. Trop. Ind. 1954: 66. 1955; Mold., Résumé 144, 273, & 451. 1959; G. Taylor, Ind. Kew, Suppl. 12: 36. 1959; Mold., Fifth Summ. 1: 235 & 463 (1971) and 2: 868. 1971; Mold., Phytol. Mem. 2: 225 & 539. 1980; P. Holmgren & al., Ind. Vasc. Pl. Type Microf. 441. 1985; Mold., Phytologia 57: 390 & 391 (1985) and 60: 60. 1986.

A woody plant, about 1 m. tall; branches and branchlets tetragonal, rather slender, very densely spreading-hirsute with yellowish-gray hairs 1--2 mm. long; leaves decussate-opposite; petioles slender, 4--9 mm. long, flattened-sulcate above, densely villous-hirsute with yellowish-gray hairs like on the branchlets; leaf-blades chartaceous, grayish-brown when dry, lighter beneath, elliptic, 3--7 cm.

long, 1.3--3.4 cm. wide, apically acute or very shortly acuminate, marginally entire, basally acute or short-acuminate, lightly pubescent above, with the hairs eventually wearing off, densely grayish-tomentose beneath; midrib slender, flat above, prominulous beneath; secondaries very slender, 3 or 4 per side, arcuate-ascending, prominulous beneath, flat above, not anastomosing at the margins; veinlet reticulation abundant but difficult to distinguish; peduncles slender, 3.5--4.3 cm. long, densely hirsute with yellowish-gray hairs 1--2 mm. long like on the branchlets; cymes 3--4 cm. long and wide, several times dichotomous, rather densely flowered, its branches densely hirsute like the peduncles; bractlets narrow-elliptic, about 5 mm. long, densely villous, attenuate at both ends; pedicels filiform, 1.5--2 mm. long, villous; calyx campanulate, its tube about 5 mm. long and 2 mm. wide, externally villous-hirsutulous with many-celled white hairs, the rim 5-toothed, the teeth about 3 mm. long, apically long-caudate, villous; corolla hypocrateriform, white, the tube narrow-cylindric, about 1 cm. long, less than 1 mm. wide, externally lightly puberulous, the limb ampliate to about 5 mm.; stamens exserted about 1 cm. from the corolla-mouth.

This species is based on H. J. Schlieben 5866 from open woods on hills at Lindi, by Lake Lutamba, at an altitude of 240--250 m. Tanganyika (Tanzania), collected on January 11, 1935, and deposited in the Brussels herbarium. The collector notes that the plant grows "solitary". Thus far it is known to me only from the type collection, which was cited by Thomas (1936) and distributed in herbaria as *C. acerbianum* (Visian.) Benth. Thomas gives the date of collection as January "12".

Citations: TANZANIA: Tanganyika: Schlieben 5866 (B--isotype, Br--type, Mu--isotype, N--isotype, S--isotype).

CLERODENDRUM LINDLEYI Decaisne ex Planch., Fl. Serr. Jard., ser. 1, 9: 17 [as "*Clerodendron*" J. 1853; Mold., Geogr. Distrib. Avicenn. 5, 14, 26, & 37. 1939.]

Synonymy: *Clerodendron foetidum* Hort. Paris ex Planch., Fl. Serr. Jard., ser. 1, 9: 17. 1853 [not *C. foetidum* Bunge, 1833, nor (Burm.) Bunge, 1985, nor (L.) Bunge, 1985, nor D. Don, 1825, nor Miq., 1921, nor *Clerodendrum foetidum* Bunge, 1840]. *Clerodendron fragrans flore simplici* Lindl. ex Voss in Vilim., Blumengärt. 1: 830 in syn. 1895. *Clerodendron lindleyi* "Decne. ex Planch." apud Bakh. in Lam & Bakh., Bull. Jard. Bot. Buitenz., ser. 3, 3:88 & 109. 1921. *Clerodendron foetidum* Hort. ex Rehnelt, Pareys Blumengärt., ed. 1, 282 in syn. 1932.

Bibliography: Planch., Fl. Serr. Jard., ser. 1, 9: 17. 1853; Regel, Gartenfl. 6: 363 (1857) and 11: 64/65, pl. 353. 1862; Regel, Trans. Russ. Hort. Soc. 1862: pl. 79. 1862; Maxim., Bull. Acad. Imp. Sci. St.-Pétersb. 31: 84. 1886; Forbes & Hemsl., Journ. Linn. Soc. Lond. Bot. 26 [Ind. Fl. Sin. 2]: 260. 1890; Jacks. in Hook. f. & Jacks., Ind. Kew., imp. 1, 1: 561. 1893; Voss in Vilim., Blumengärt. 1: 830. 1895; H. J. Lam, Verbenac. Malay. Arch. 259 & 363. 1919; Bakh. in Lam & Bakh., Bull. Jard. Bot. Buitenz., ser. 3, 3: 88, 109, & IX. 1921; Stapf, Ind. Lond. 2: 239. 1930; P'ei, Mem. Sci. Soc.

China 1 (3): 133. 1932; Rehnelt, Pareys Blumengärtn., ed. 1, 282. 1932; Mold., Geogr. Distrib. Avicenn. 5, 14, 26, & 37. 1939; Mold., Known Geogr. Distrib. Verbenac., ed. 1, 16, 25, 36, 58, 72, & 90. 1942; Jacks. in Hook. f. & Jacks., Ind. Kew., imp. 2, 1: 561. 1946; Mold., Alph. List Cit. 1: 17 & 187 (1946) and 2: 353, 359, 413, 414, 538, 561, 563, 564, 572, 608, 644, & 646. 1948; H. N. & A. L. Mold., Pl. Life 2: 69. 1948; Mold., Known Geogr. Distrib. Verbenac., ed. 2, 29, 43, 76, 131, 135, 159, & 182. 1949; Mold., Alph. List Cit. 3: 708, 712, 719, 748, 801, 844, 879, & 928 (1949) and 4: 987, 1052, 1096, & 1299. 1949; Pételet, Pl. Med. Camb. Laos Vietn. 2: 253 (1954) and 4: 99. 1954; Alain in León & Alain, Fl. Cuba, imp. 1, 4: 319 & 321. 1957; Mold., Résumé 35, 51, 88, 169, 174, 181, 216, 263, 266, & 451. 1959; Jacks. in Hook. f. & Jacks., Ind. Kew., imp. 3, 1: 561. 1960; Mold., Résumé Suppl. 3: 17 & 19 (1962) and 6: 8. 1963; Mold., Biol. Abstr. 47: 6794. 1966; Howard & Powell, Taxon 17: 55. 1968; Mold., Résumé Suppl. 16: 11 & 19. 1968; Mold., Fifth Summ. 1: 69, 95, 148, 288, 292, 300, 311, 359, 444, 445, & 449 (1971) and 2: 868. 1971; Rouleau, Taxon Ind. 1: 92. 1972; Alain in León & Alain, Fl. Cuba, imp. 2, 2: 319 & 321. 1974; Mold., Phytologia 28: 449 (1974), 31: 390 (1975), and 34: 245 & 249. 1976; E. H. Walker, Fl. Okin. South. Ryuk. 890 & 892. 1976; Hocking, Excerpt. Bot. A.30: 419. 1978; Mold., Phytol. Mem. 2: 41, 61, 88, 140, 259, 277, 281, 282, 291, 302, 313, 350, & 539. 1980; Reis & Lipp, New Pl. Sources Drugs 251. 1982; H. N. & A. L. Mold. in Dassan. & Fosb., Rev. Handb. Fl. Ceyl. 4: 411, 459--461, & 472. 1983; Mold., Phytologia 52: 466 (1983), 57: 36 & 338 (1985), 58: 286, 332, 338, 343--345, 417, & 460 (1985), and 60: 62 & 130. 1986.

Illustrations: Regel, Gartenfl. 11: 64/65, pl. 353 (in color). 1862; Regel, Trans. Russ. Hort. Soc. 1862: pl. 79. 1862.

A bush or small, erect, bushy shrub or undershrub, 0.9--3 m. tall; branchlets rather obtusely tetragonal, brownish, more or less pulvulerulent-puberulent or subglabrous in age, usually pilose at the nodes; twigs densely glandular-pubescent with short irregular hairs or puberulent; nodes not annulate, usually pilose; principal internodes 1.3--11 cm. long; leaves decussate-opposite; petioles rather stoutish, 1.5--10.5 cm. long, medullose almost to the base, usually collapsing at the base in drying, not much ampliate basally, densely short-pubescent or puberulent; leaf-blades membranous or subchartaceous, somewhat darker green above than beneath, ovate to broadly ovate or deltoid, 6.5--16.5 cm. long, 6.5--15.5 cm. wide, apically acute or short-acuminated, marginally entire or denticulate to rather coarsely and irregularly sharp-dentate and usually more or less ciliate, basally subcordate or subtruncate (the central part of the base more or less cuneate-acute), very shortly and sparsely pilose with scattered hairs or puberulent-pulverulent above, more or less puberulent beneath or pilose-pubescent with short irregular hairs especially on the venation, usually marked with several, black, discoid glands at the very base and also sometimes scattered over other parts of the lamina; secondaries 3--6 per side, the 2 lowest issuing from the midrib at the very base of the blade and very decidedly pinnately branched from the basal side, all arcuate-ascending,

distant, joined in many loops near the margins; inflorescence terminal, paniculate but densely compact, many-flowered, 4--12.5 cm. long, 6--9 cm. wide, very conspicuously bracteate and bracteolate, puberulent or pilose to short-pubescent throughout; peduncles continuous with the apex of the twigs and similar in all respects, 0.5--6 cm. long, usually with a pair of large foliaceous bracts, similar in all respects to the leaves but smaller, at or near the apex; bracts very numerous, lanceolate or oblong, 1.2--3.5 cm. long, 3--5 mm. wide, surpassing the calyx, acuminate at both ends, pulverulent or pilose-pubescent on both surfaces, marked with numerous, subcutaneous, black, discoid glands, stipitate; pedicels slender, 1--7 mm. long; flowers showy, slightly fragrant or malodorous; calyx obconic-tubular or oblong-campanulate, 1--1.5 cm. long, often magenta-crimson, externally puberulent, the rim 5-lobed, the lobes linear or linear-lanceolate, apically purplish; corolla hypocrateriform, light purple or deep purplish-pink to purplish, pink, red, pink-lavender, or flesh-color, darker externally, the tube slender, 2.5--3 cm. long, mostly 4 times as long as the calyx, the limb mostly 5-lobed, the lobes obovate, 5--8 mm. long; stamens 4, long-exserted; filaments white; anthers deep-purple; fruiting-calyx red; fruit drupaceous, at first green.

This species is native to southern China, Hainan island, and Himalayan India and Burma. It is rather abundantly cultivated and tends to escape and become naturalized (as in Cuba). It has been widely confused in botanical and horticultural literature, as well as in herbaria, with *C. bungei* Steud. and the simple-flowered form of *C. philippinum* Schau. Its roots, dried well for about 5 hours, are sold on the Canton market as "ch'au shi mut li" and are employed in the manufacture of a medicine taken orally for the strengthening of the leg muscles. The fruit is edible and the leaves are used for brewing a tea in China.

Clerodendrum lindleyi is a valid species and is most definitely not the single-flowered form of *C. philippinum* as maintained by Schauer, Merrill, and so many other authors. The true single-flowered form of *C. philippinum* is well represented by such collections as León 6320 in the Havana herbarium and is exactly like the common double-flowered form in its foliar characters, flower-size, etc., except for the simple nature of its corollas; *C. lindleyi*, on the other hand differs notably in its leaf characters, flower size, etc.

Planchon (1853) comments that "Trois arbustes bien distincte ont reçu le nom de *Clerodendron foetidum*. D'abord, l'espèce primitive à laquelle ce nom doit rester, et dont nous transcrivons en note la diagnose, comme objet de comparaison. C'est une plante du Népal, à feuilles elliptiques, à calice plus long que le tube de la corolle: elle n'existe pas, que nous sachions, dans nos jardines [This is *Caryopteris foetida* (D. Don) Thellung]. La second espèce, signalée dans le Revue horticole, en 1851, d'après des exemplaires que l'on cultive à Paris depuis une douzaine d'années, nous parait presque identique avec une prétendue forme à fleurs simples du *Clerodendron fragrans*, forme déjà publiée dans le Botanical Register, en Août 1838, mais sans indication d'origine [This is *C. lindleyi* Decaisne].

Reste la troisième espèce que nous appellerons avec Steudel, *Clerodendron Bungei* et dont le portrait dessiné sur le vivant dans l'établissement Van Houtte, n'existe dans aucune publication horticole [This is the plant we now call *C. bungei* Steud.]" He continues further about *C. Lindleyi* as follows: "C'est évidemment cette plante du Botanical Register que M. Schauer, dans le Prodromus de De Candolle (Tom. XI, p. 666), signale, après Lindley, comme le type à fleurs simples du *Clerodendron fragrans*, et dont il indique l'introduction comme récente à la date de 1847. Voici pourtant sur quelques raisons se fonde notre savant collaborateur, M. Decaisne, pour considérer cette plante comme espèce à part, sous le nom manuscrit de *Clerodendron Lindleyi*, 1o Le type à fleurs simples du *Clerodendron fragrans* figuré par Ventenat, (Malmais. t. 70) et qui fleurit en France, dans le jardin de Cels, vers le commencement du siècle, a des corolles à limbe bien plus large que le *Cl. Lindleyi*. 2o Le *Clerodendron fragrans* est une plante délicate, qu'on ne cultive jamais en pleine terre à Paris, et dont les racines ne tracent pas: l'autre espèce est, au contraire, rustique et ses racines tragantes. Ce que nous disons ici, du reste, se rapporte spécialement à la plante cultivée au Muséum de Paris, sous le nom de *Clerodendron foetidum*, plante qui diffère un peu de celle du Botanical Register en ce que ses fleurs sont inodorées (et non presque aussi odorantes que celles du *C. fragrans*) et que ses jeunes pousses surtout sont couvertes d'un velouté de couleur violette. Y aurait-il encore là deux espèces confondues? Qui étudiera jugera."

In this connection it may be noted that Howard & Powell (1968) also assert: "It should also be noted that the plant called *Clerodendrum lindleyi* often referred to the synonymy of '*Clerodendrum fragrans*' does not, in our opinion, belong there."

Voss (1895), in reviewing this involved situation, states that, in his opinion, *Clerodendrum lindleyi* "ist vielleicht nur eine Abtreibend; Aste stumpf-4 kantig, kurz haarig (anscheinend grün bleibend. Blätter ziemlich langgestielt, fast herzförmig, breit-eirund oder fast rundlich, zugespitzt, schön grün, am Rande ausgeschweift-gezähnelt oder fast ganzrandig, am Grunde diesseits der Blattstiel-Einfügung drüsenträg, beiderseits kurzhaarig. Blüten in groszen, endständigen, vielblütigen, gedrungenen, bouquetförmigen Doldentrauben, deren Spindel, Blütenstiele und Kelche dicht flaumig sind. Deckblättchen lanzettlich oder linealisch-lanzettlich, die Kelche überragend und wie diese drüsenträg. Kelch verkehrt-kegelförmig-röhlig mit 5 spaltigen Saum und linealisch-lanzettlichen pfriechlich-zugespitzten Zipfeln. Blumenkrone ausser kaum kurzhaarig, nur schwach duftend, mit schmaler Röhre, die meist 4 mal so lang als der Kelch ist; Kronsaum meist 5 teilig. Blüten fleischfarbig oder rot, aussen dunkler, weniger schön als bei *C. foetidum*."

Collectors have encountered *C. lindleyi* along roadsides, in forests and roadside thickets, along railroad tracks, in green valleys, on wooded and damp grassy hillsides, in hedges and on dry land, in open brush, in uncultivated ground near houses, in waste places, and on garbage dumps, at 60--1450 m. altitude, in flower in March, April, June to August, and October to December. Hu reports finding it

"growing over large areas by the village" of Hong Kong. Walker reports it naturalized on Okinawa; Pittier says of it in Venezuela: "Introduced but said to be indigenous". Alain (1924) reports it escaped in Pinar del Río, Cuba, "originally from tropical Asia".

A key to help distinguish this species from other Cuban species will be found under *C. grandiflorum* (Hook.) Schau. in the present series of notes [60: 130--131].

The corollas are described as having been "red" on Chung 2395 and Herb. Canton Chr. Coll. 12501, "reddish-purple" on Rock 6621, "purplish" on Ching 1994 and Chun 5999, "light-purple" on Hu 13126, "deep purplish-pink" on Walker 8136, and "pink-lavender" on Gressitt 1333.

The leaves on Boeea 6473 and Koelz 25301 look remarkably like those of *C. philippinum* Schau., without regular marginal teeth visible and with elongated corolla-tubes; on Ging 5537 the leaf-blades have regular teeth plainly visible over almost the whole margin.

Vernacular and common names recorded for *C. lindleyi* are "chau fung t'an", "ch'au shi mit li", "chau ti fung". "Lindley's clerodendrum", "rindiri-kusagi", "sarang banoea", "yaezaki-kusagi", and "yuen tau fung".

It may be pointed out here that the *Clerodendron foetidum* Bunge, *C. foetidum* (Burm.) Bunge, *C. foetidum* (L.) Bunge, and *Clerodendrum foetidum* Bunge, referred to in the synonymy (above), all apply to the last-mentioned, a valid species, which see, while *Clerodendron foetidum* D. Don is a synonym of *Caryopteris foetida* (D. Don) Thellung and *Clerodendron foetidum* Miq. is a synonym of *Clerodendrum buchanani* (Roxb.) Walp., which see.

Walker (1976) cites from cultivation on Okinawa: Amano 6251, SIRI 6894, Tamayose s.n., and Walker 8136; Reis & Lipp (1982) cite Tsang 21353 from Kwangtung, China.

Material of *C. lindleyi* has been misidentified and distributed in some herbaria as *C. bracteatum* Wall., *C. bungei* Steud., *C. canescens* Wall., *C. foetidum* Bunge, *C. fragrans* Vent., *C. fragrans* Willd., *C. glandulosum* Colebr., *C. roseum* Poit., *C. trichotomum* Thunb., and *C. violaceum* Gürke.

On the other hand, the Kingdon-Ward 18191, Liang 61691, McClure 9207, and Nooteboom 1246, distributed as typical *C. lindleyi*, actually represent its f. *albiflorum* Mold., while Roig 8157 is *C. splendens*.

Citations: MEXICO: Veracruz: Quarles van Ufford 516 (Ut). CUBA: Havana: Ekman 13181 (Ld--photo, N, N--photo, S); León 3367 (Ha, N); Morales & Bosque 348 (B); Shafer 419 (Cm, N). Pinar del Río: Shafer 419a (Es, Es). BRAZIL: Bahia: Paulay s.n. (V). Rio de Janeiro: Radio 146 (B, W--1234147); Sampaio s.n. [Campos, Jan. 1935] (Ja--44982). INDIA: Assam: Koelz 25304 (Mi). CHINA: Chekiang: Ching 1994 (Ca--281707, W--1246853). Fukien: Chang 4577 (Ca--303266); Chang & Po 3945 (Ca--300372); Cheng 1317 (Ca--286970), 3237 (Ca--299489); Chung 2395 (Ca--232902), 5534 (N); En 2021 (Ca--288341); Fong 19 (Ca--300037); Ging 5537 (Mi), 5840 (Ws), 6872 (Gg--151506); Po 12324 (Ca--325797); Tai 11033 (Ca--325798). Kiangsi: Lau 4731 (N, W--1753359). Kwangsi: Ching 5278 (Ca--409768, W--1248669); Steward & Cheo 606 (N). Kwangtung: Chun 5999 (Ca--347366); [to be continued]